The Crisis in the Cleanup of the Santa Susana Field Laboratory

BY DANIEL HIRSCH

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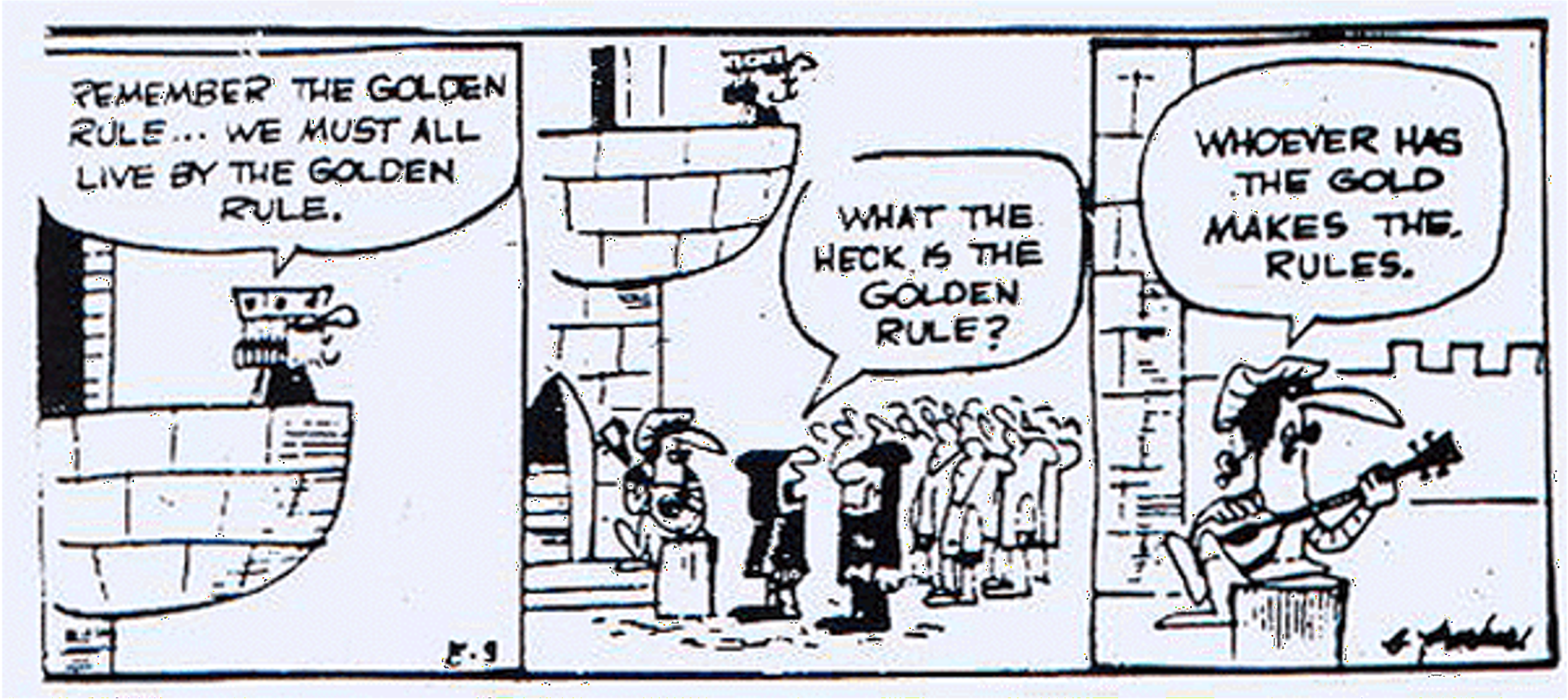
PRESIDENT, COMMITTEE TO BRIDGE THE GAP

FEBRUARY 13, 2020

The Fundamental Message



Remember the Golden Rule


REMEMBER THE GOLDEN RULE... WE MUST ALL LIVE BY THE GOLDEN RULE.
WHAT THE HECK IS THE GOLDEN RULE?
WHOEVER HAS THE GOLD MAKES THE RULES.

EXTERNALITIES:

Transferring the Cost of Doing Business Onto Others

It is often cheaper for corporations and others to pollute because they are allowed to externalize environmental and social costs. Rather than pay to prevent pollution, or to clean it up, *they transfer the cost to innocent others in the form of health impacts*.

Grace was diagnosed with cancer in 2014, only weeks after her fourth birthday. She spent over one hundred days inpatient the first year of treatment and had chemotherapy 10x above standard treatment.

Grace relapsed in August of 2017, spending another six weeks inpatient while receiving strong chemo and four days of twice-a-day radiation.

After a bone marrow transplant in 2017, Grace, now ten, is cancer free.



Grace, PH+ Leukemia

Source: Parents vs SSFL https://parentsagainstssfl.com/our-kids

Hazel was diagnosed with stage three neuroblastoma, an incredibly aggressive and dangerous cancer, when she was two years-old in 2013.

In March of 2018, at just 7 years old, Hazel passed away.



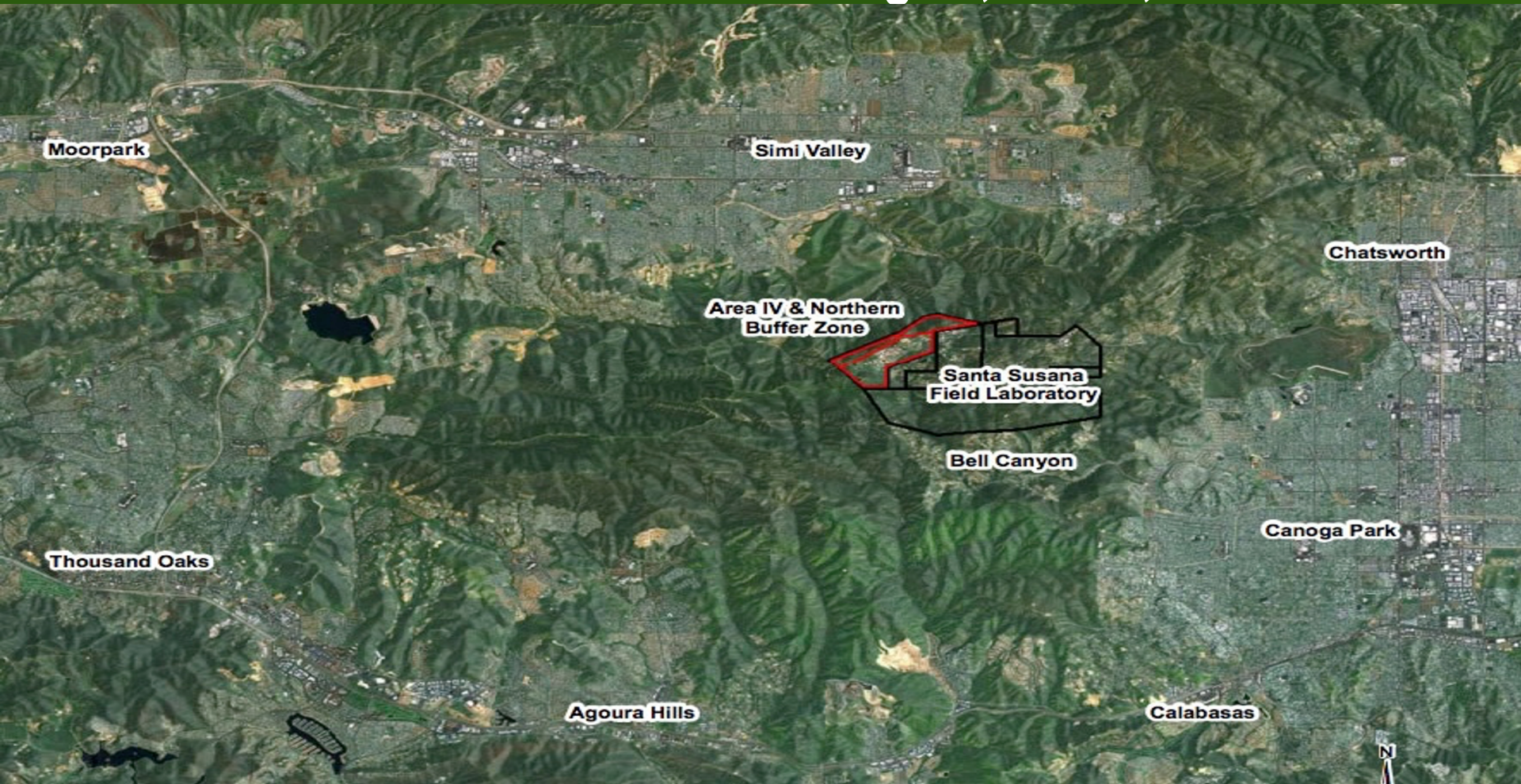
Hazel, Neuroblastoma

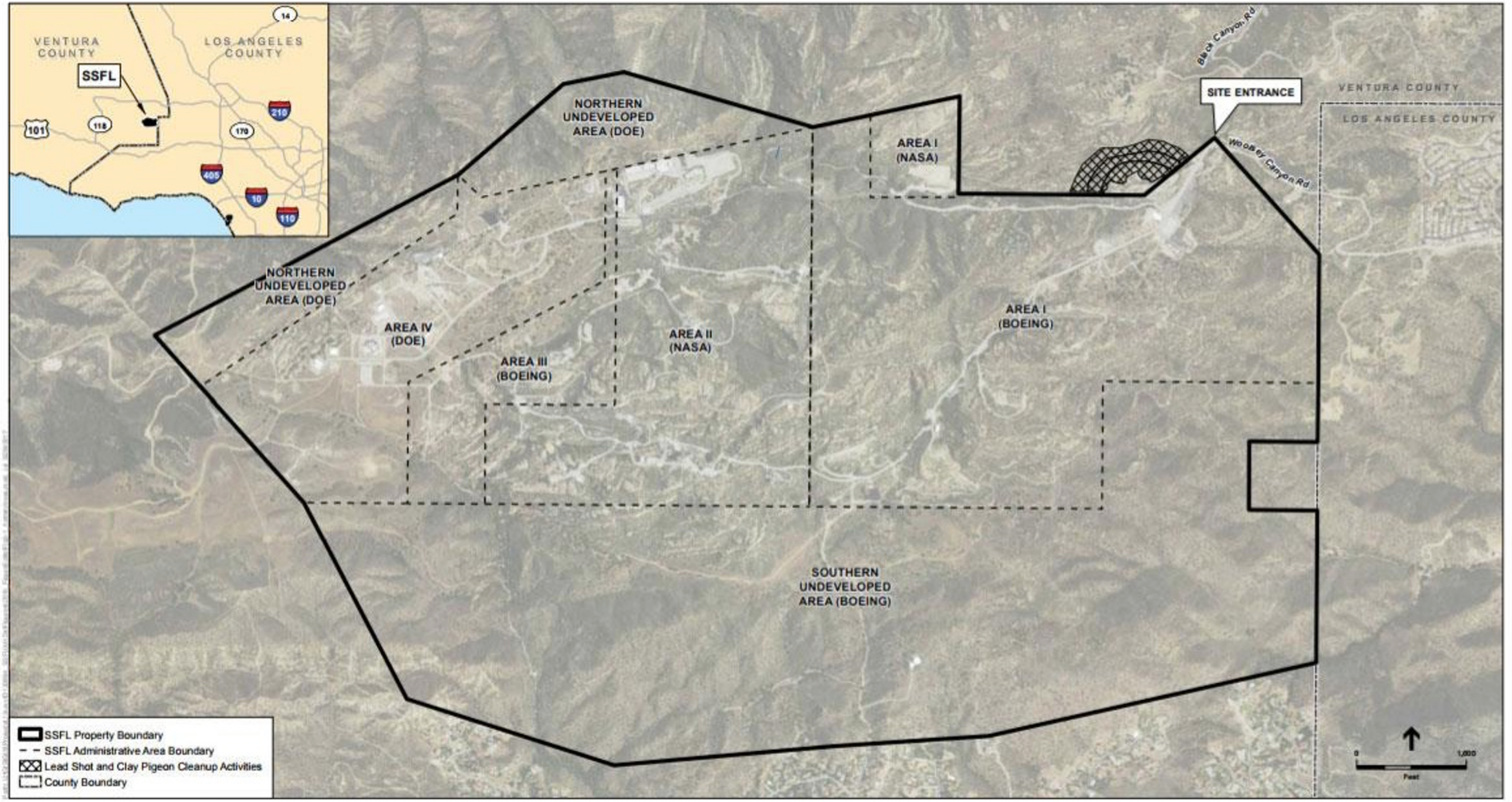
Source: Parents vs SSFL https://parentsagainstssfl.com/our-kids

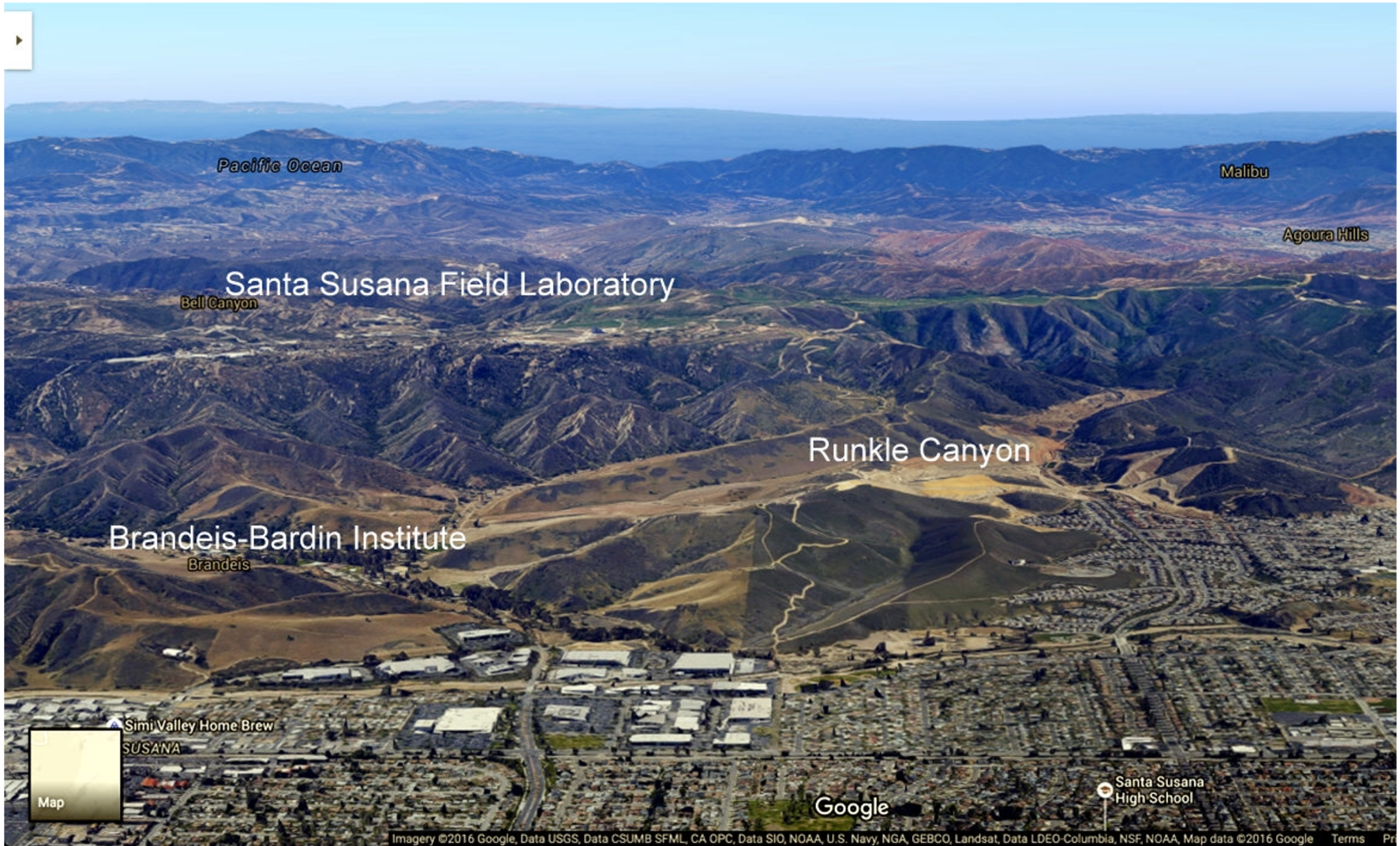
Santa Susana Field Laboratory

RESPONSIBLE PARTIES: DOE, NASA, AND THE BOEING COMPANY

SSFL Location – Elevation range 2,245– 1,175 feet




VENTURA COUNTY
LOS ANGELES COUNTY
SSFL
14
101
118
170
210
405
10
110
NORTHERN UNDEVELOPED AREA (DOE)
AREA I (NASA)
SITE ENTRANCE
Black Canyon Rd
Woolsey Canyon Rd
VENTURA COUNTY
LOS ANGELES COUNTY
NORTHERN UNDEVELOPED AREA (DOE)
AREA IV (DOE)
AREA III (BOEING)
AREA II (NASA)
AREA I (BOEING)
SOUTHERN UNDEVELOPED AREA (BOEING)
SSFL Property Boundary
SSFL Administrative Area Boundary
Lead Shot and Clay Pigeon Cleanup Activities
County Boundary
0
1,000
Feet


Pacific Ocean
Malibu
Agoura Hills
Santa Susana Field Laboratory
Bell Canyon
Runkle Canyon
Brandeis-Bardin Institute
Brandeis
Simi Valley Home Brew
SUSANA
Map
Google
Santa Susana
High School
Imagery ©2016 Google, Data USGS, Data CSUMB SFML, CA OPC, Data SIO, NOAA, U.S. Navy, NGA, GEBCO, Landsat, Data LDEO-Columbia, NSF, NOAA, Map data ©2016 Google
Terms


Space Preserve
Bell Canyon
Brandeis
Callahan Field
Simi Valley Cu
Sequoia Park
Garden Grove

SSFL History

Established in late 1940s for rocket testing

In 1949, Atomic Energy Commission undertook a search for a remote nuclear testing lab for work too dangerous to do in populated areas

Site was to be in area where population development was unlikely

SSFL ranked 5th out of 6 for meteorological safety criteria

Picked anyway, because of driving time to UCLA



UNCLASSIFIED

NAA-SR-30

Subject Category: BIOLOGY

UNITED STATES ATOMIC ENERGY COMMISSION

GENERAL REACTOR SITE SURVEY OF THE LOS ANGELES AREA

By
R. G. Chalker

UNIVERSITY OF CALIFORNIA
LOS ANGELES
MAY 9 1953
LIBRARY
GOVT. PUBS. ROOM

June 1, 1949

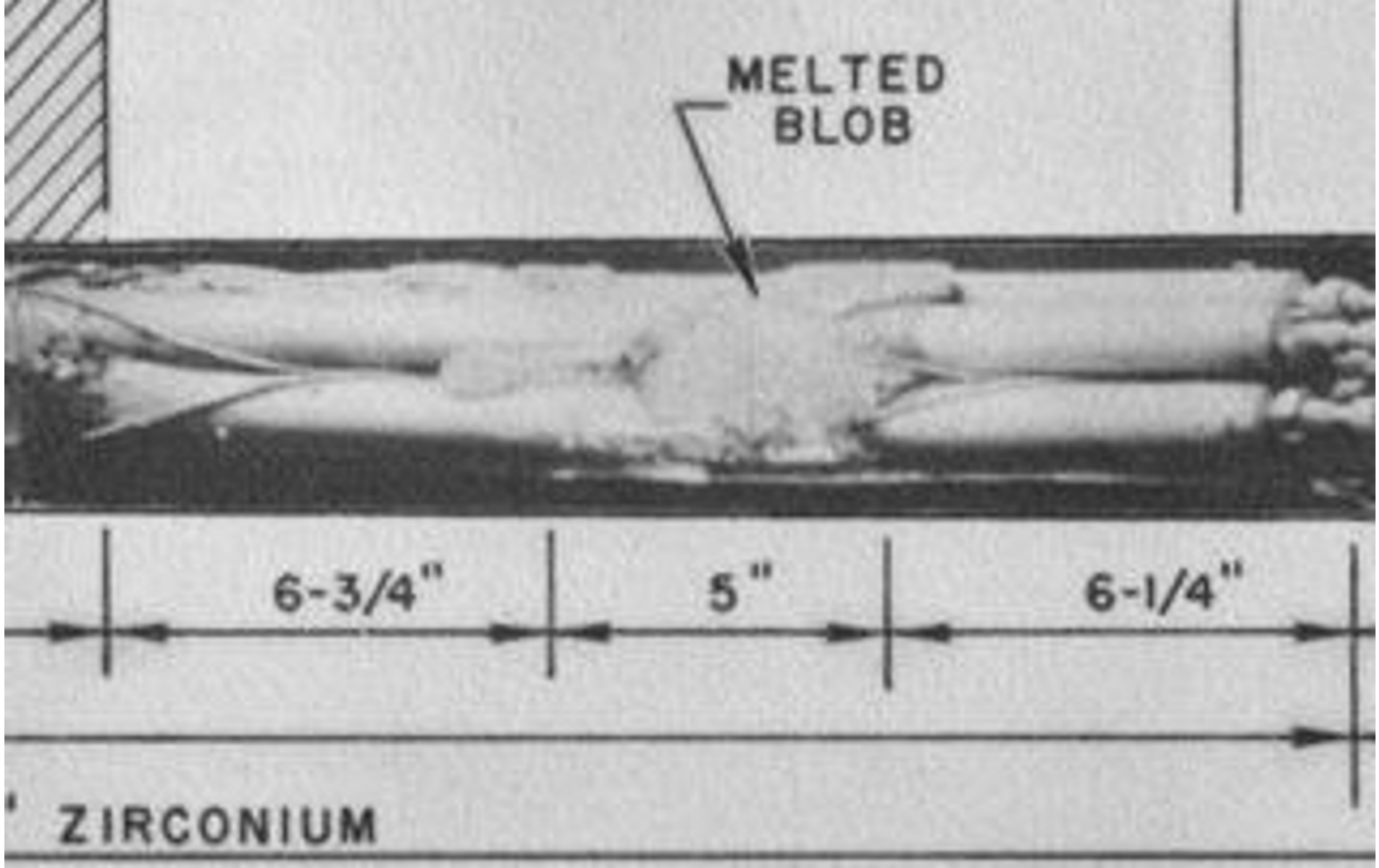
North American Aviation, Inc.
Los Angeles

Technical Information Service, Oak Ridge, Tennessee

SSFL History Cont.

- Power of reactors was to be limited so as to reduce dose to nearby population
- A few years later, the limit was set aside and a large test reactor constructed nonetheless (the SRE, the one that had the partial meltdown)
- Now half a million people reside within ten miles




MELTED
BLOB
6-3/4"
5"
6-1/4"
ZIRCONIUM

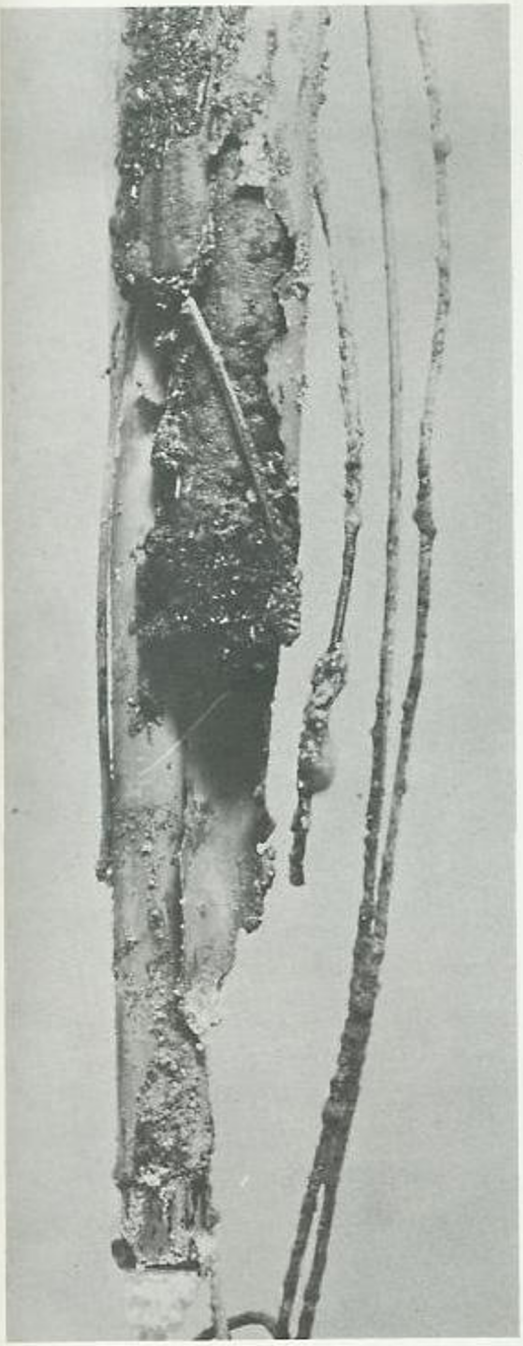


Figure IV-A-6. Bottom of Damaged Element in Channel 55

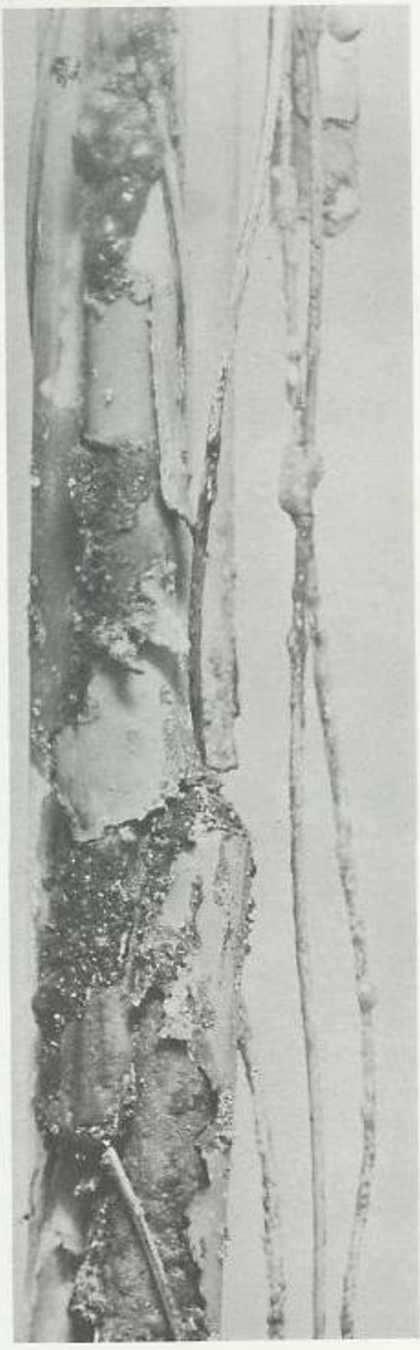
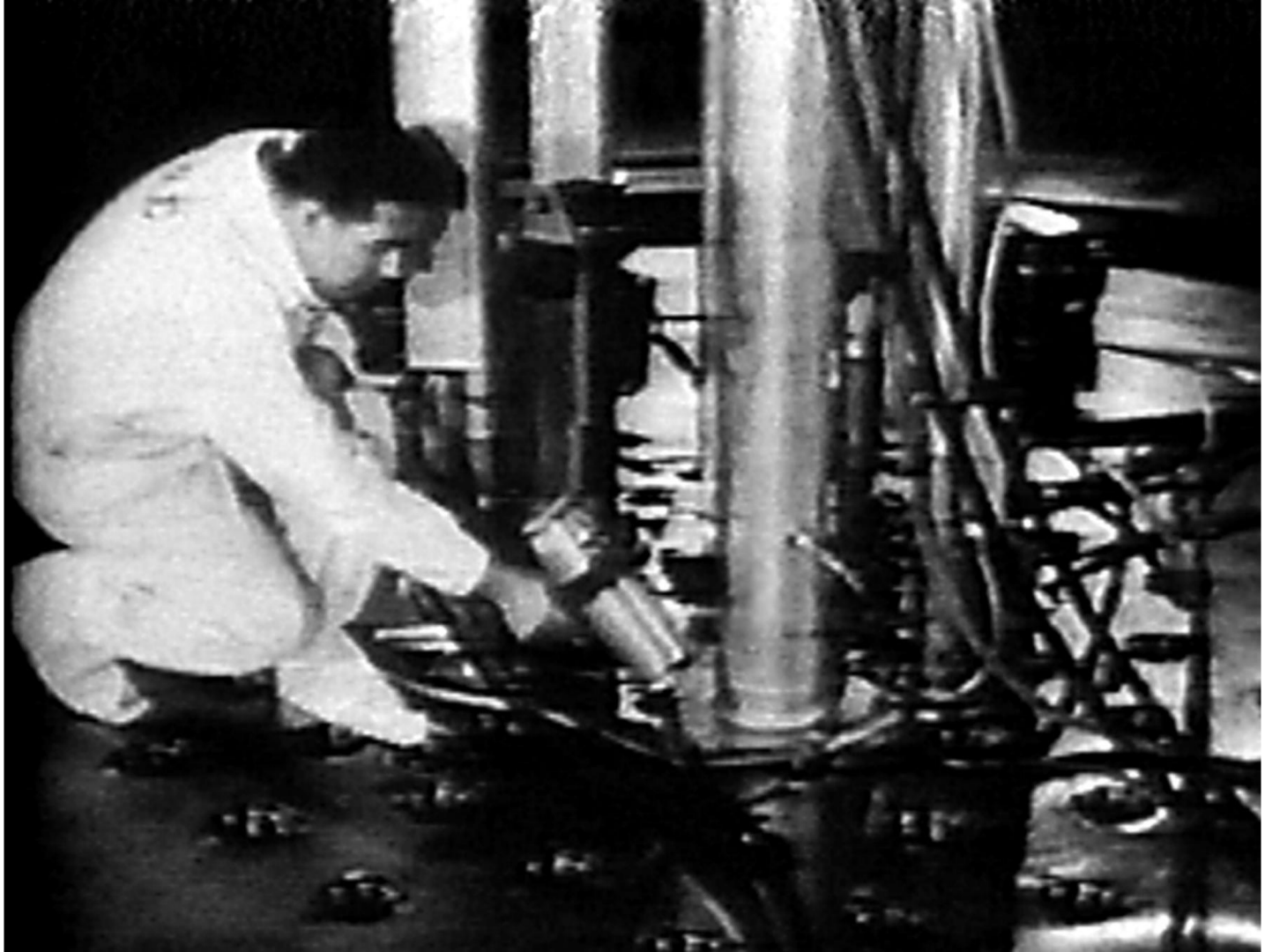
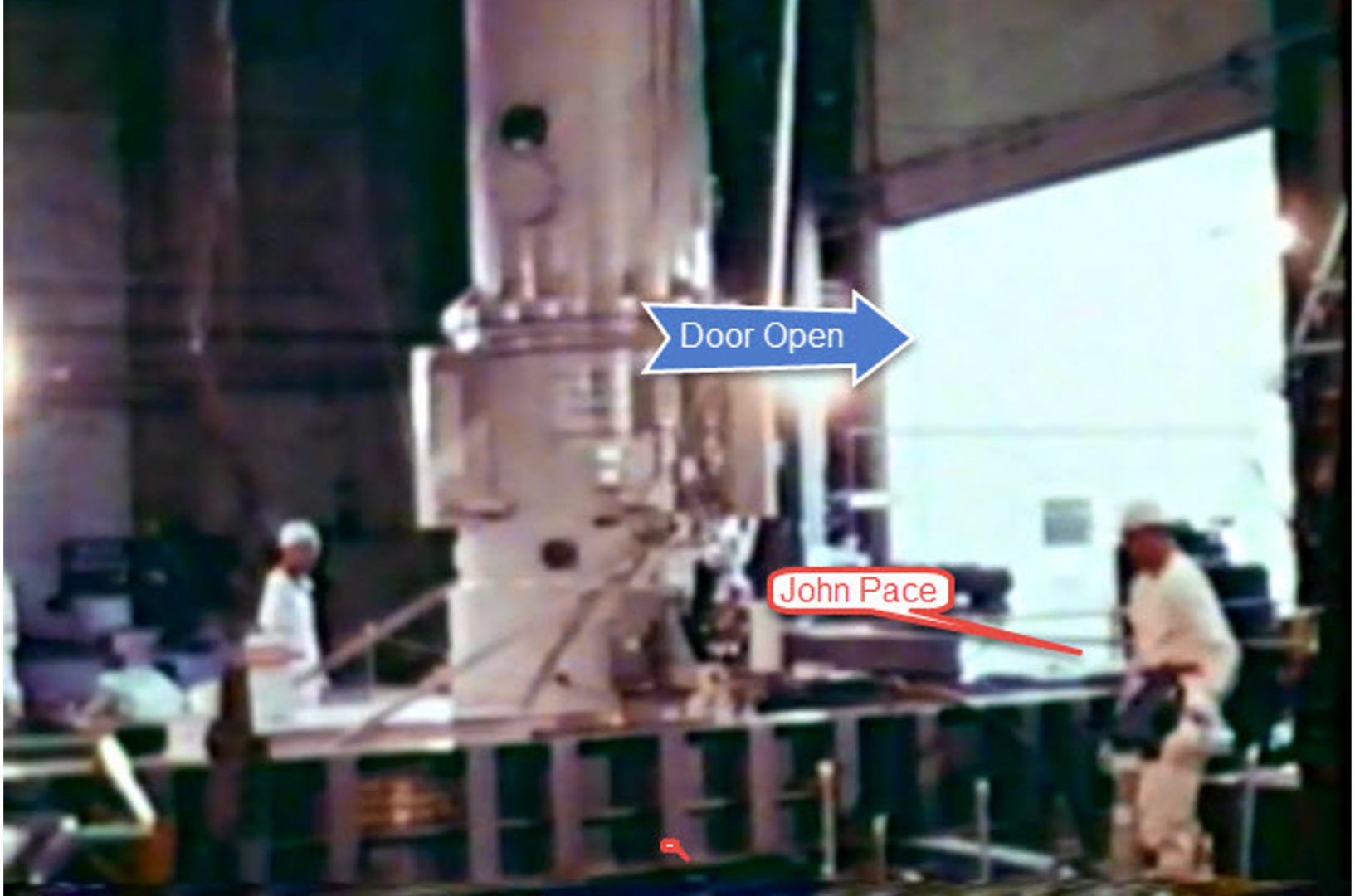


Figure IV-A-7. Midsection of Damaged Element in Channel 55






Door Open
John Pace

NUMEROUS OTHER ACCIDENTS AND RELEASES

At least 3 other reactors suffered accidents:

- SNAP8ER—80% of nuclear fuel damaged
- SNAP8DR—35% of fuel damaged
- AE6—release of fission gases

Radioactive Fires at the Hot Lab

Releases from Plutonium Fuel Fabrication

Numerous Other Spills and Releases

SSFL NUCLEAR WORK OCCURRED OVER FOUR DECADES



Nuclear Area at Santa Susana Field Laboratory

Over 30,000 rocket engine tests took place over five decades.



Extremely Toxic Chemicals Were Released in the Rocket Work

For example, 1 million gallons of TCE were used to flush rocket engines after tests, and then to percolate into the ground and groundwater. It is dangerous in parts per billion. The TCE plume has migrated offsite.

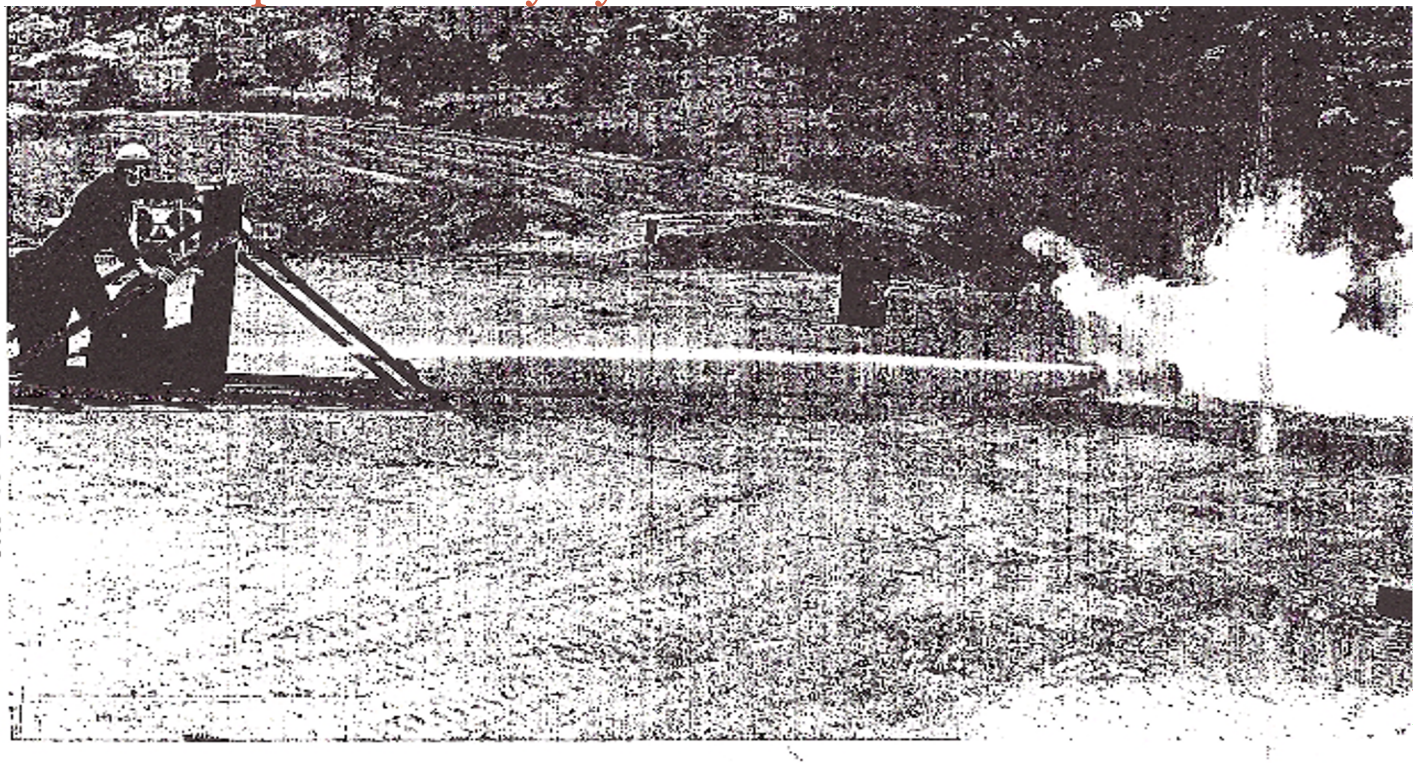
Tons of perchlorate, a component of solid rocket fuels, were used. A state-funded study by Dr. Ali Tabidian found it had apparently migrated offsite and into the Arroyo Simi, infiltrating into groundwater and contaminating numerous wells. Perchlorate's maximum level in water is also measured in parts per billion.

HISTORY OF IMPROPER DISPOSAL OF HAZARDOUS MATERIALS

- Radioactive and chemical materials burned in Area IV sodium burn pit against rules for decades
- Rocketdyne cited for unpermitted burning of hazardous materials in Area I
- In mid-1990s two workers were killed in an explosion caused by illegal disposal of hazardous materials. FBI raided SSFL and US Attorney charged Rocketdyne with 3 felonies, largest environmental fine at the time.



Workers “disposed” of highly toxic waste in barrels by shooting at them, causing them to explode and release contents into the environment, with the contaminants spread widely by toxic smoke.



Ex. 34 - 5205

GURUCAN
000121

Ex. 34 - 5204

GURJCAN
000120

SSFL Contaminants of Concern

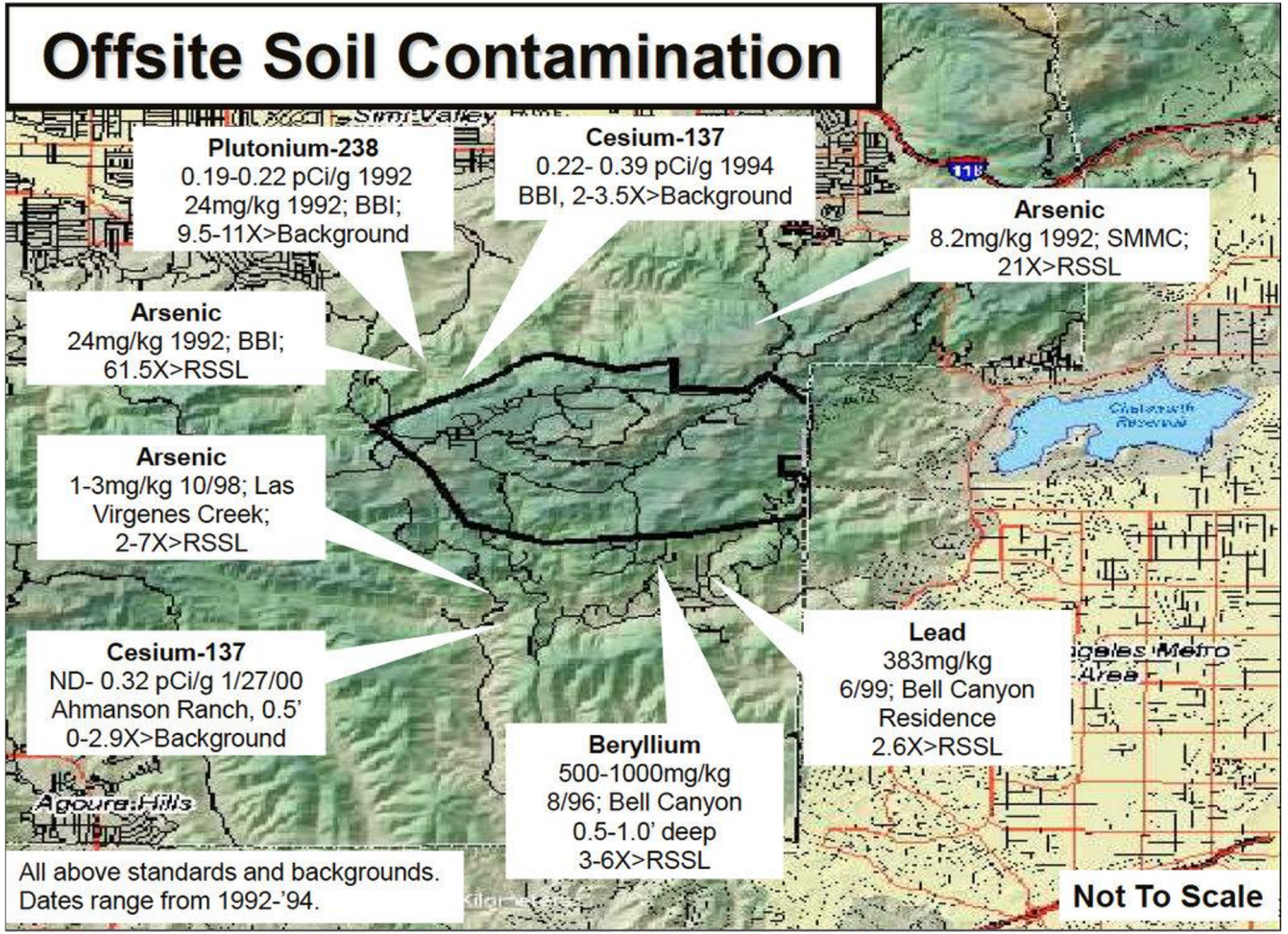
Radionuclides: cesium-137, strontium-90, plutonium-239, tritium, among other radioactive materials. In 2012, the EPA found radiation in hundreds of samples at SSFL, in some places over 1,000 times background. The National Academy of Scientists has concluded there is no safe level of exposure to radiation.

Chemicals: TCE, perchlorate, dioxins, heavy metals, PCBs, and various other volatile and semi-volatile organics. Many are regulated at a few parts per billion (ppb), yet there are very large quantities present in the soil at SSFL. SSFL disposed of tons of perchlorate in open-air burn pits which polluted soil, groundwater and surface water. At SSFL, 500,000 gallons of TCE are estimated to be in the soil column and aquifer.

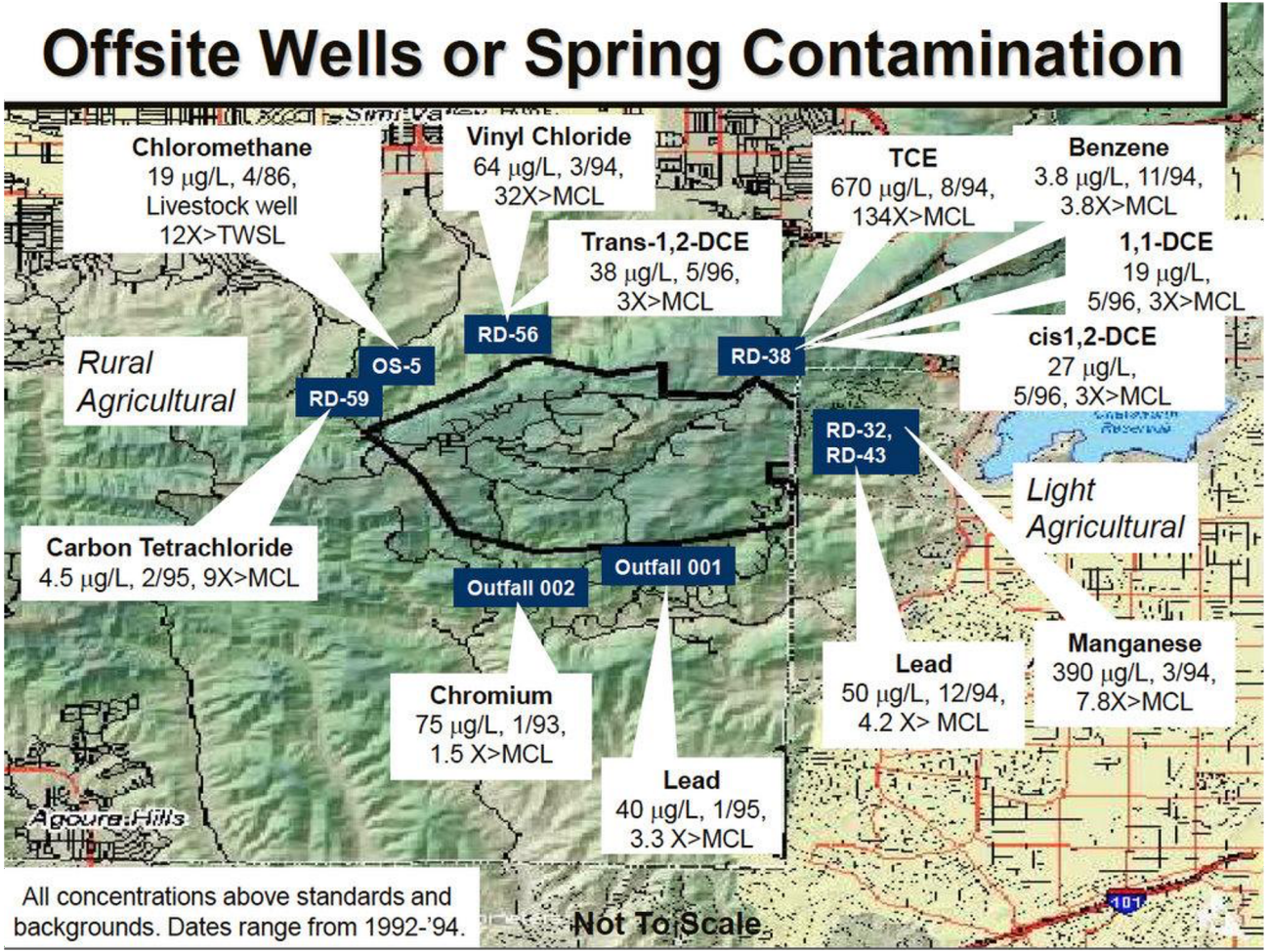
Radionuclide	Health/Environmental Effects
Tritium	Linked to developmental problems, reproductive problems, genetic abnormalities.
Radium	Lymphoma, bone cancer, leukemia, aplastsicanemia linked with inhalation. Other cancers with external exposure.
Technetium-99	Cancer linked to ingestion (contaminated food and water).
Iodine-131	Linked to thyroid malfunction/cancer. Combines with soil and organic materials easily.
Cesium-137	Can cause cancer 10 – 30 years after ingestion, inhalation, or absorption. Moves easily in environment, difficult to clean up.
Strontium-90	Chemically similar to calcium. Can cause bone cancer, cancer near bones, and leukemia.
Plutonium	Contaminant in dust. Extreme risk of cancers, kidney damage. Can stay in the body for decades.

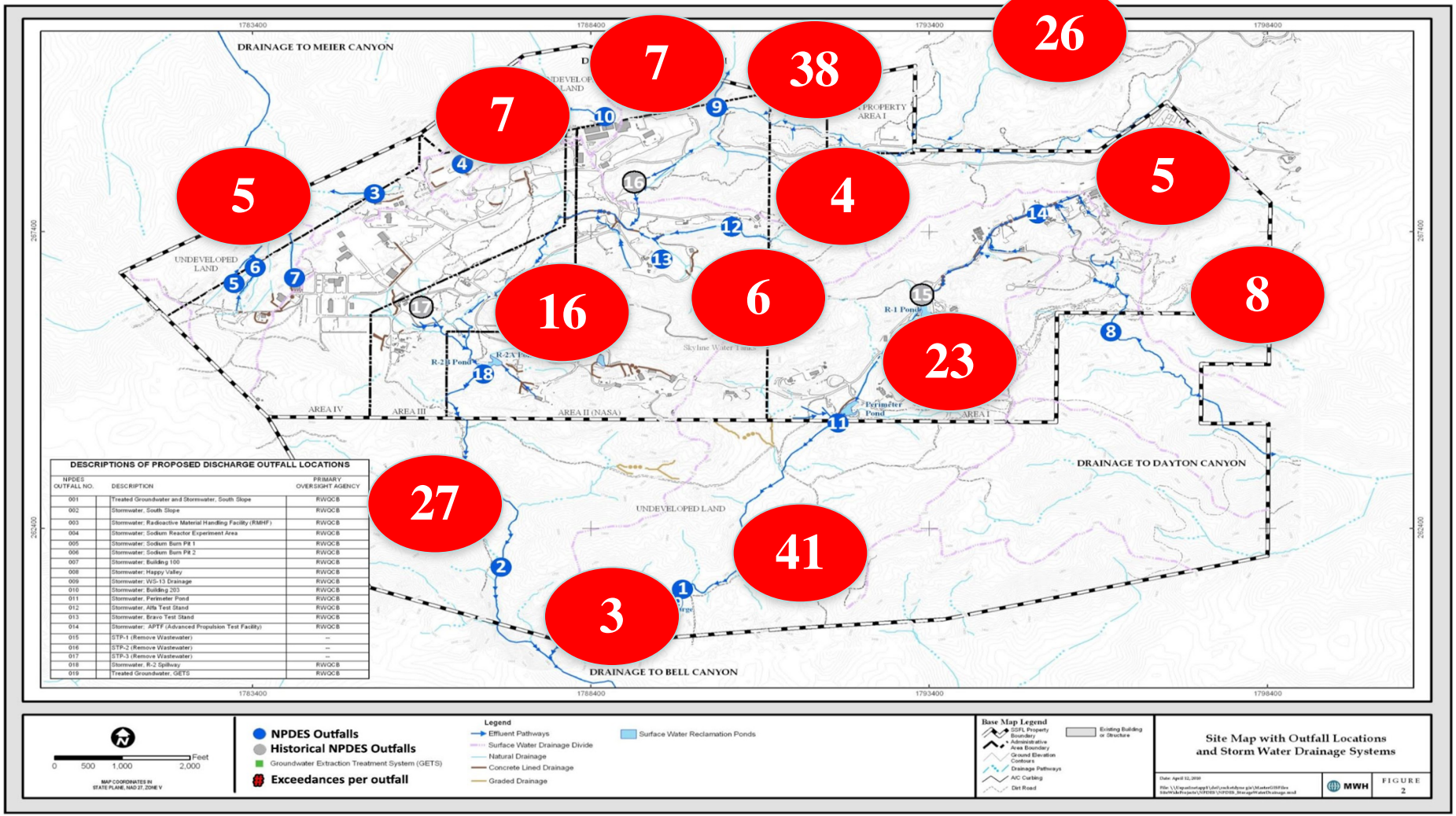
Chemical	Health/Environmental Effects
TCE	Impaired immune system function, damage liver and kidney, impaired fetal development. In larger amounts it may cause impaired heart function, unconsciousness and death
Perchlorate	Interferes with iodide uptake into the thyroid gland, causing hypothyroidism in mothers and negatively impacting proper childhood development such as decreased learning capability.
Dioxins	Carcinogenic and can cause reproductive, developmental, immunological, and endocrine side effects
PCBs	Can serious effects on the liver, immune, endocrine, and reproductive are classified as a probable carcinogen
Lead	Linked with learning disabilities, infertility, cancer, and increased risk of heart attacks

Offsite Soil Contamination



Offsite Wells or Spring Contamination





DESCRIPTIONS OF PROPOSED DISCHARGE OUTFALL LOCATIONS

NPDES OUTFALL NO.	DESCRIPTION	PRIMARY OVERSIGHT AGENCY
001	Treated Groundwater and Stormwater, South Slope	RWQCB
002	Stormwater, South Slope	RWQCB
003	Stormwater; Radioactive Material Handling Facility (RMHF)	RWQCB
004	Stormwater; Sodium Reactor Experiment Area	RWQCB
005	Stormwater; Sodium Burn Pit 1	RWQCB
006	Stormwater; Sodium Burn Pit 2	RWQCB
007	Stormwater; Building 100	RWQCB
008	Stormwater; Happy Valley	RWQCB
009	Stormwater; WS-13 Drainage	RWQCB
010	Stormwater; Building 203	RWQCB
011	Stormwater; Perimeter Pond	RWQCB
012	Stormwater, Alfa Test Stand	RWQCB
013	Stormwater, Bravo Test Stand	RWQCB
014	Stormwater; APTF (Advanced Propulsion Test Facility)	RWQCB
015	STP-1 (Remove Wastewater)	--
016	STP-2 (Remove Wastewater)	--
017	STP-3 (Remove Wastewater)	--
018	Stormwater, R-2 Spillway	RWQCB
019	Treated Groundwater, GETS	RWQCB

0 500 1,000 2,000 Feet

MAP COORDINATES IN STATE PLANE, NAD 27, ZONE V

NPDES Outfalls
Historical NPDES Outfalls
Groundwater Extraction Treatment System (GETS)
Exceedances per outfall

Legend
Effluent Pathways
Surface Water Drainage Divide
Natural Drainage
Concrete Lined Drainage
Graded Drainage
Surface Water Reclamation Ponds

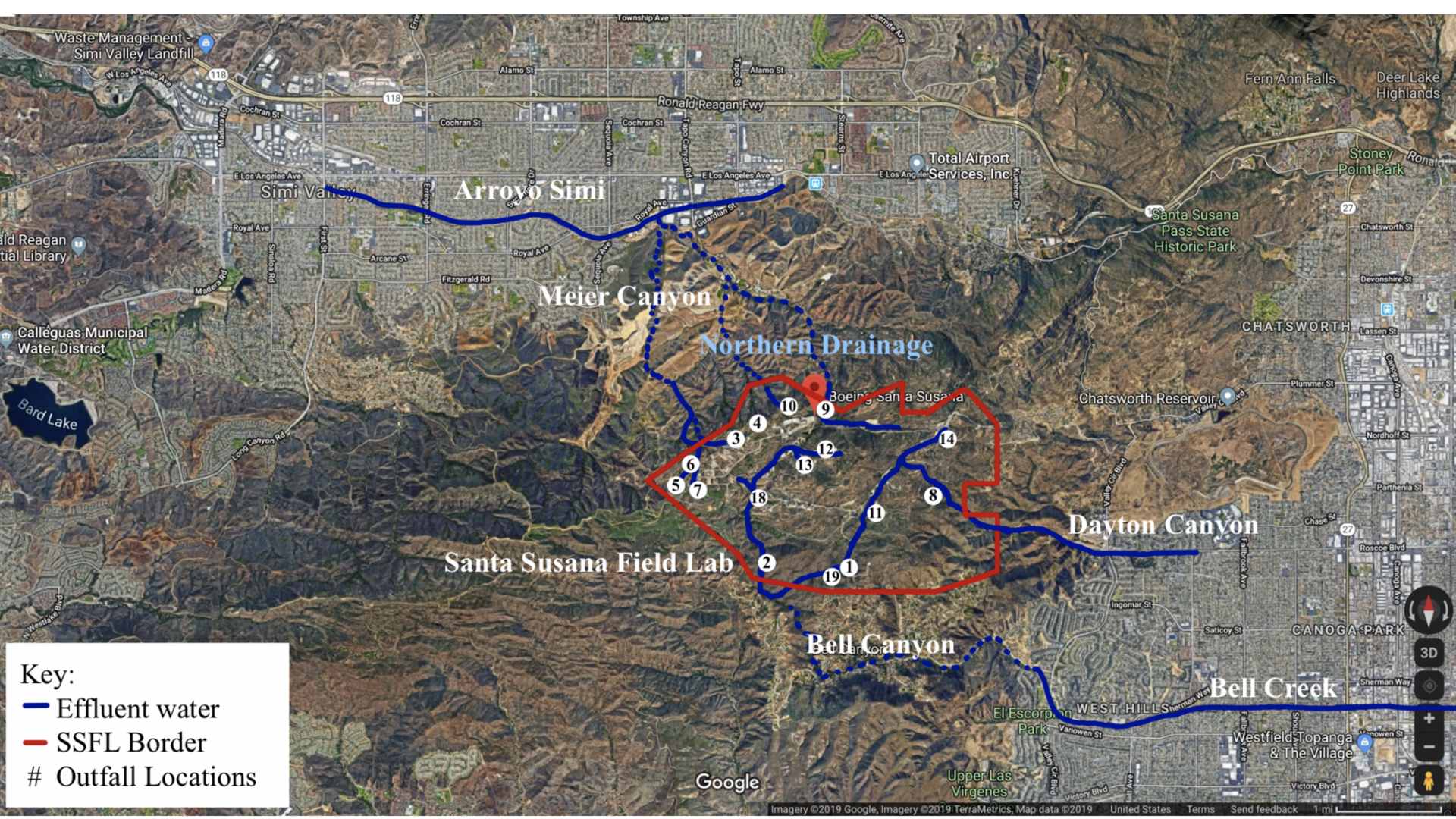
Base Map Legend
EGFL Property Boundary
Administrative Area Boundary
Ground Elevation Contours
Drainage Pathways
A/C Curbing
Dirt Road
Existing Building or Structure

Site Map with Outfall Locations and Storm Water Drainage Systems

Date: April 12, 2010

MWH

FIGURE 2


Waste Management - Simi Valley Landfill
Arroyo Simi
Meier Canyon
Northern Drainage
Santa Susana Field Lab
Dayton Canyon
Bell Canyon
Bell Creek
Bard Lake
Calleguas Municipal Water District
Total Airport Services, Inc
Santa Susana Pass State Historic Park
Chatsworth Reservoir
Fern Ann Falls
Deer Lake Highlands
Stoney Point Park
CHATSWORTH
CANOGA PARK
WEST HILLS
Westfield Topanga & The Village
Upper Las Virgenes
Ronald Reagan Fwy
Key:
Effluent water
SSFL Border
Outfall Locations
Google
Imagery ©2019 Google, Imagery ©2019 TerraMetrics, Map data ©2019
United States
Terms
Send feedback
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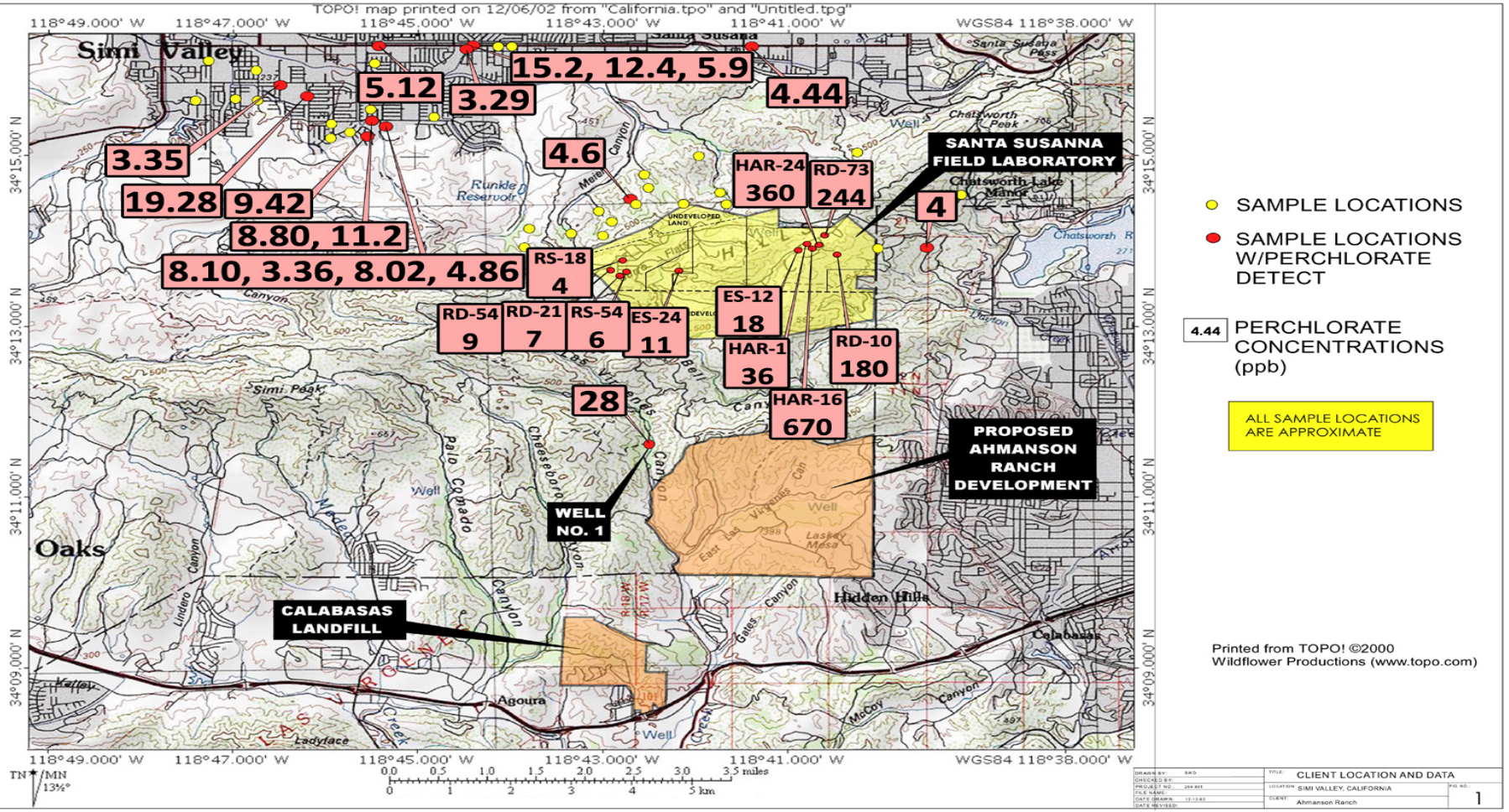

TOPO! map printed on 12/06/02 from "California.tpo" and "Untitled.tpg"
118°49.000' W
118°47.000' W
118°45.000' W
118°43.000' W
118°41.000' W
WGS84 118°38.000' W
34°15.000' N
34°13.000' N
34°11.000' N
34°09.000' N
Simi Valley
Oaks
Agoura
Hidden Hills
Calabasas
Runkle Reservoir
Chatsworth Peak
Chatsworth Lake Manor
Simi Peak
Santa Susana Pass
15.2, 12.4, 5.9
5.12
3.29
4.44
3.35
4.6
19.28
9.42
8.80, 11.2
8.10, 3.36, 8.02, 4.86
HAR-24
360
RD-73
244
SANTA SUSANNA FIELD LABORATORY
4
RS-18
4
ES-12
18
RD-54
9
RD-21
7
RS-54
6
ES-24
11
HAR-1
36
RD-10
180
28
HAR-16
670
PROPOSED AHMANSON RANCH DEVELOPMENT
WELL NO. 1
CALABASAS LANDFILL
TN 13½° MN
0.0 0.5 1.0 1.5 2.0 2.5 3.0 3.5 miles
0 1 2 3 4 5 km
SAMPLE LOCATIONS
SAMPLE LOCATIONS W/PERCHLORATE DETECT
4.44 PERCHLORATE CONCENTRATIONS (ppb)
ALL SAMPLE LOCATIONS ARE APPROXIMATE
Printed from TOPO! ©2000 Wildflower Productions (www.topo.com)
CLIENT LOCATION AND DATA
LOCATION: SIMI VALLEY, CALIFORNIA
CLIENT: Ahmanson Ranch
1

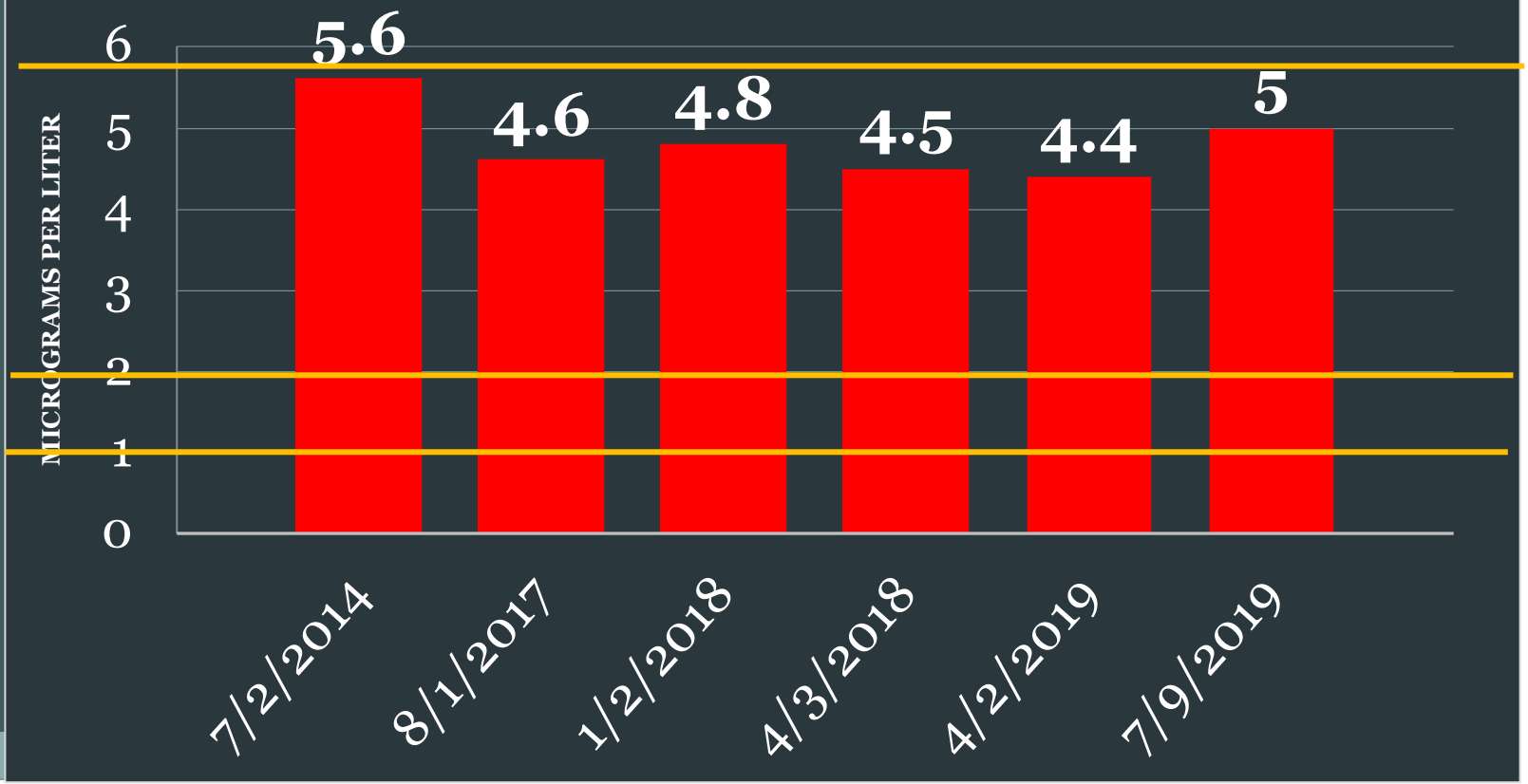
Perchlorate Has Repeatedly Been Detected in the Sycamore Well, a Major Water Supply Well Less Than a Mile From Where We Are Meeting Tonight

Perchlorate Found in Sycamore Well, Simi Valley

Old CA Maximum Contaminant Limit (MCL)

New CA proposed MCL

California Public Health Goal



Perchlorate Found in Sycamore Well, Simi Valley

Old CA Maximum Contaminant Limit (MCL)

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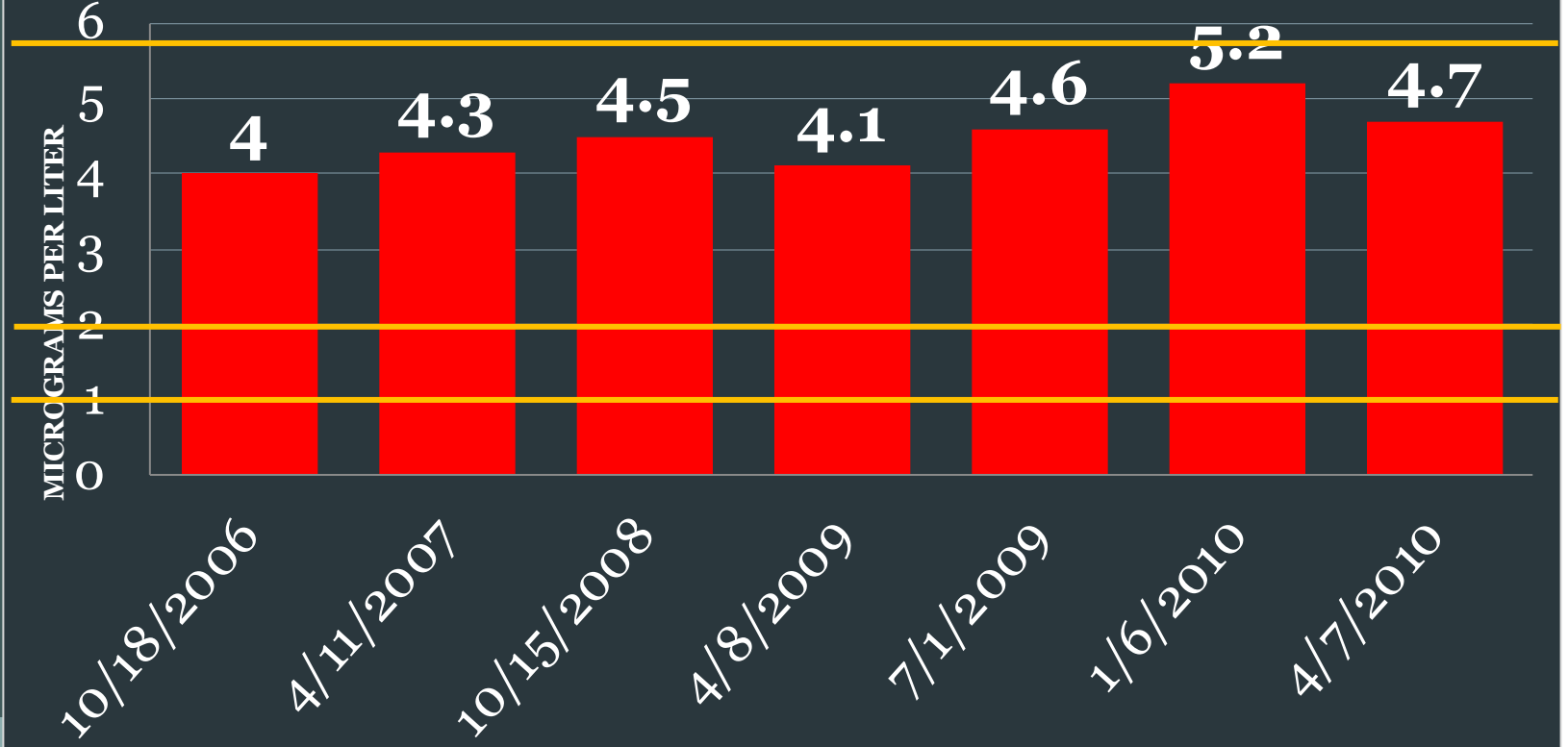


In 2015 Boeing released reports showing very high risk in some areas of the site and declaring that much of the property needed no further action. In one area, the report indicates 96 out of 100 people would get cancer (if they lived on the site), and after Boeing's proposed cleanup that number falls to only 5 in 10. Regardless of what becomes of SSFL, leaving that high of contamination on site presents a threat to nearby communities.

8.1.1.2 Garden Use

Another pathway evaluated for the hypothetical future suburban resident is the consumption of homegrown produce that has accumulated COPCs from soil. In accordance with the SRAM Rev. 2 Addendum, only the 0-to-2-foot-bgs soil interval is considered for this scenario. The site risk calculation results for the homegrown produce exposure pathway are provided in Table E1-5. The risk calculation table for background soil is provided in Table E1-6.

For the homegrown produce consumption pathway, the total site ELCR is >9 x 10^{-1} and the incremental risk is 9 x 10^{-1}, which is above the USEPA target risk range of 1 x 10^{-6} to 1 x 10^{-4} and exceeds the DTSC point of departure of 1 x 10^{-6}. The main contributors to the site soil ELCR are MMH (92 percent contribution; 9 x 10^{-1} risk); arsenic (7 percent contribution; 7 x 10^{-2} risk); and carcinogenic polycyclic aromatic hydrocarbons (1 percent contribution; 7 x 10^{-3} risk). Risks also exceeded 1 x 10^{-6} for n-Nitrosodimethylamine (2 x 10^{-3} risk); 2,3,7,8-TCDD TEQ (6 x 10^{-4} risk); hexavalent chromium (5 x 10^{-4} risk); Aroclor-1254 (3 x 10^{-4} risk); Aroclor-

Boeing's Own Risk Estimates

Source: RCRA Facility Investigation Data Summary and Findings Report Systems Test Laboratory IV RFI Site Boeing RFI Subarea 5/9 South, Santa Susana Field Laboratory, Ventura County, California

BOEING'S OWN RISK ESTIMATES IF A PERSON LIVED AT SSFL



- An astonishing 96 people out of a 100 exposed, at the Systems Test Lab IV, would get a cancer from the contamination on site.
- Every third person exposed at the Environmental Effects Lab would get a cancer from the contamination on site.
- Every fifth person exposed at Happy Valley North would get a cancer from the contamination on site.
- Every tenth person exposed at Compound A site would get a cancer from the contamination on site.

PEDIATRIC CANCERS NEAR SSFL





Children show map of pediatric cancers near SSFL at Feb. 21, 2017 Dept. of Energy meeting

SSFL HEALTH STUDIES

- An extensive, multi-year epidemiological study by the UCLA School of Public Health found significant increases in death rates among the most exposed workers from cancers of the lung, lymph, and blood systems.

- Independent federally-funded studies found increased incidence of key cancers in the offsite population associated with proximity to SSFL, and that SSFL contamination has migrated offsite at concentrations above EPA levels of concern.

"For the period 1988 through 1995, we found that the incidence of cancer was more than 60% greater among residents living with 2 miles of SSFL than among residents living more than 5 miles for the following types of cancer: thyroid, upper aerodigestive tract, bladder, and blood and lymph tissue."

Professor Hal Morgenstern

BREAKTHROUGH: 2010 SSFL Cleanup Agreements

In 2010, administrative orders on consent (AOCs) were signed between the state department of toxic substances control (DTSC) and the department of energy (DOE) and NASA to clean up their respective portions of the property to background--i.E. Restore it to the condition it was in before being contaminated.

DTSC said that it would also require a comparable level of cleanup for boeing, based on local government's land use designations.

SSFL CLEANUP AGREEMENTS

It was Dr. Steven Chu, the Nobel Prize-winning physicist Secretary of Energy and the Assistant Secretary, Inez Triay, who proposed the agreement to clean up SSFL to background levels.



KEY ASPECTS OF THE 2010 CLEANUP AGREEMENTS

- Requires Soil Cleanup to Local Background
- Soil Defined as Including Dirt, Structures, Debris, and Anthropogenic Materials
- No “Leave in Place” Alternatives Allowed
- All Waste With Radioactivity Above Background Must Be Disposed of in Licensed LLRW Disposal Sites
- Narrowly limited exceptions to cleanup requirements
- CLEANUP TO BE COMPLETED BY 2017

Despite the requirement for full cleanup by 2017, it is 2020 and the promised soil cleanup hasn't even begun.

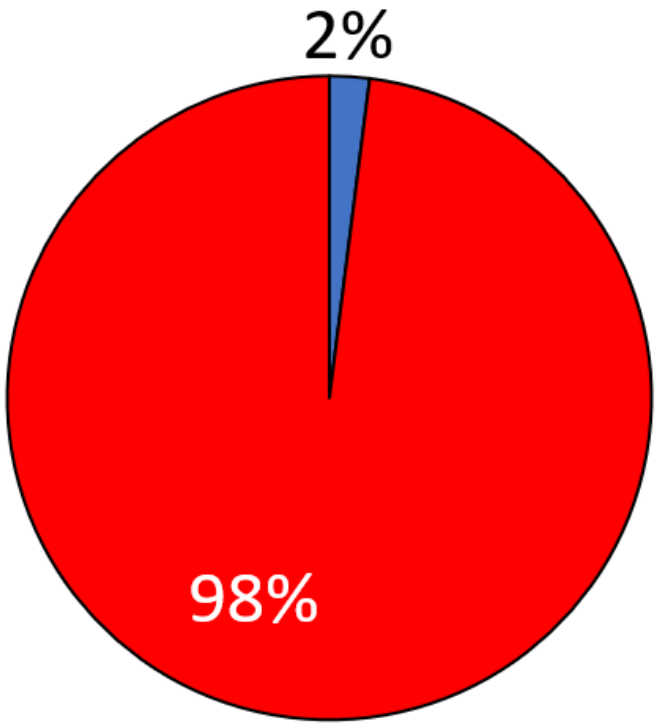


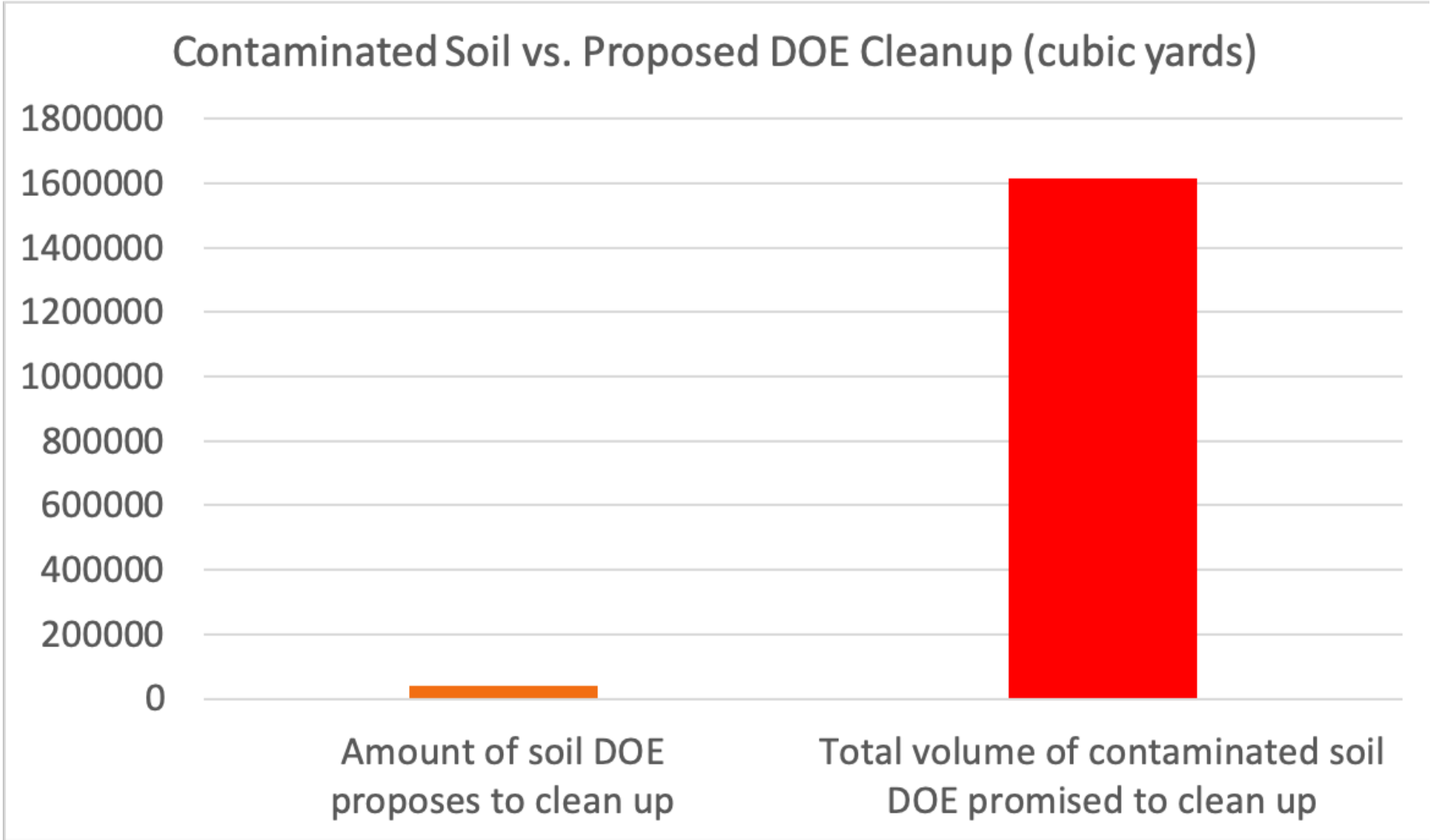
DOE'S JOHN JONES, SPEAKING BEFORE SSFL WORK GROUP, FEBRUARY 5, 2014

DEPT. OF ENERGY BREACHES ITS CLEANUP AGREEMENT

DOE issued a Final Environmental Impact Statement in Nov. 2018, proposing to leave as much as 98% of the contaminated soil not cleaned up.

Contaminated Soil vs. Proposed DOE Cleanup

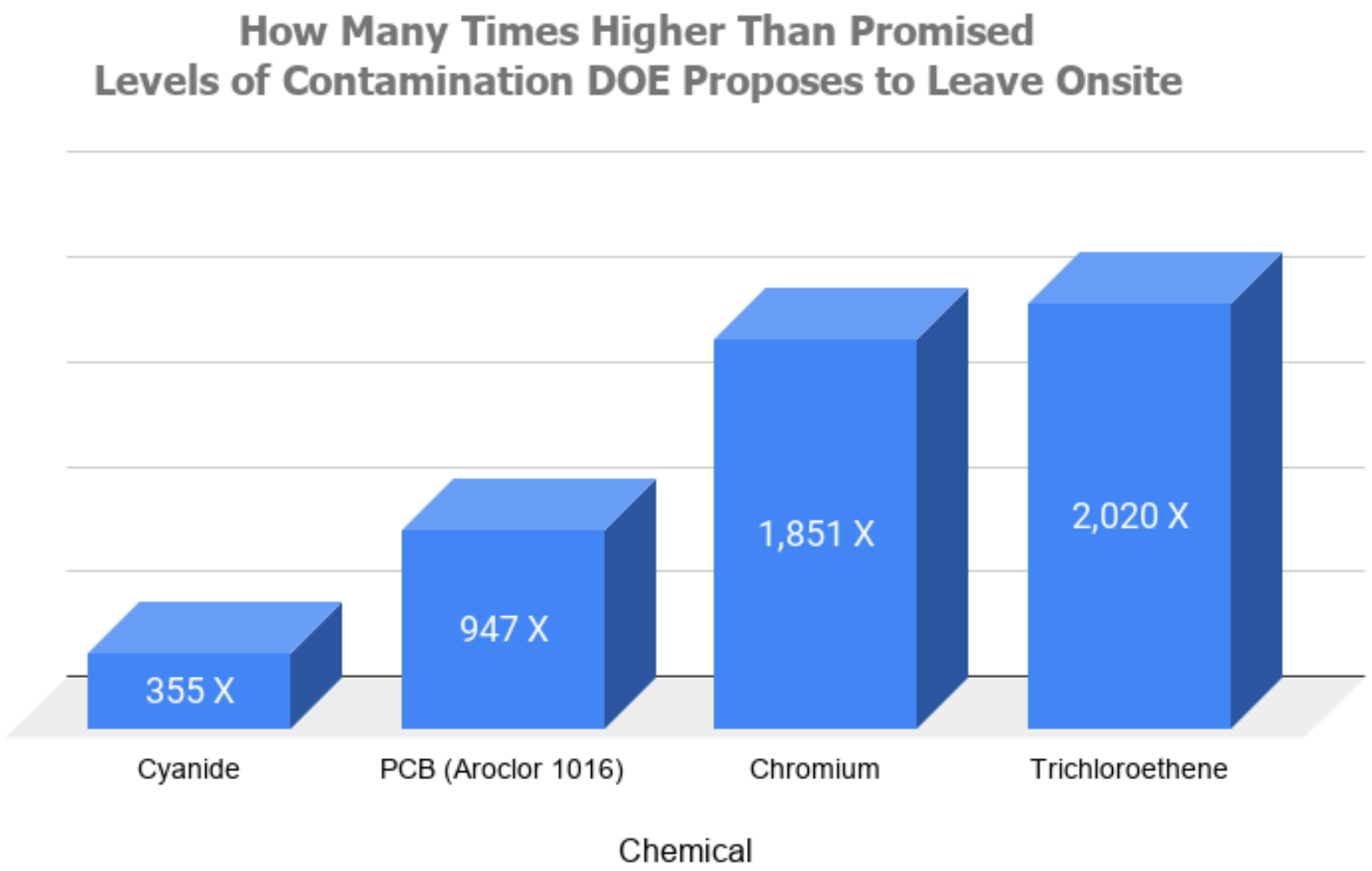


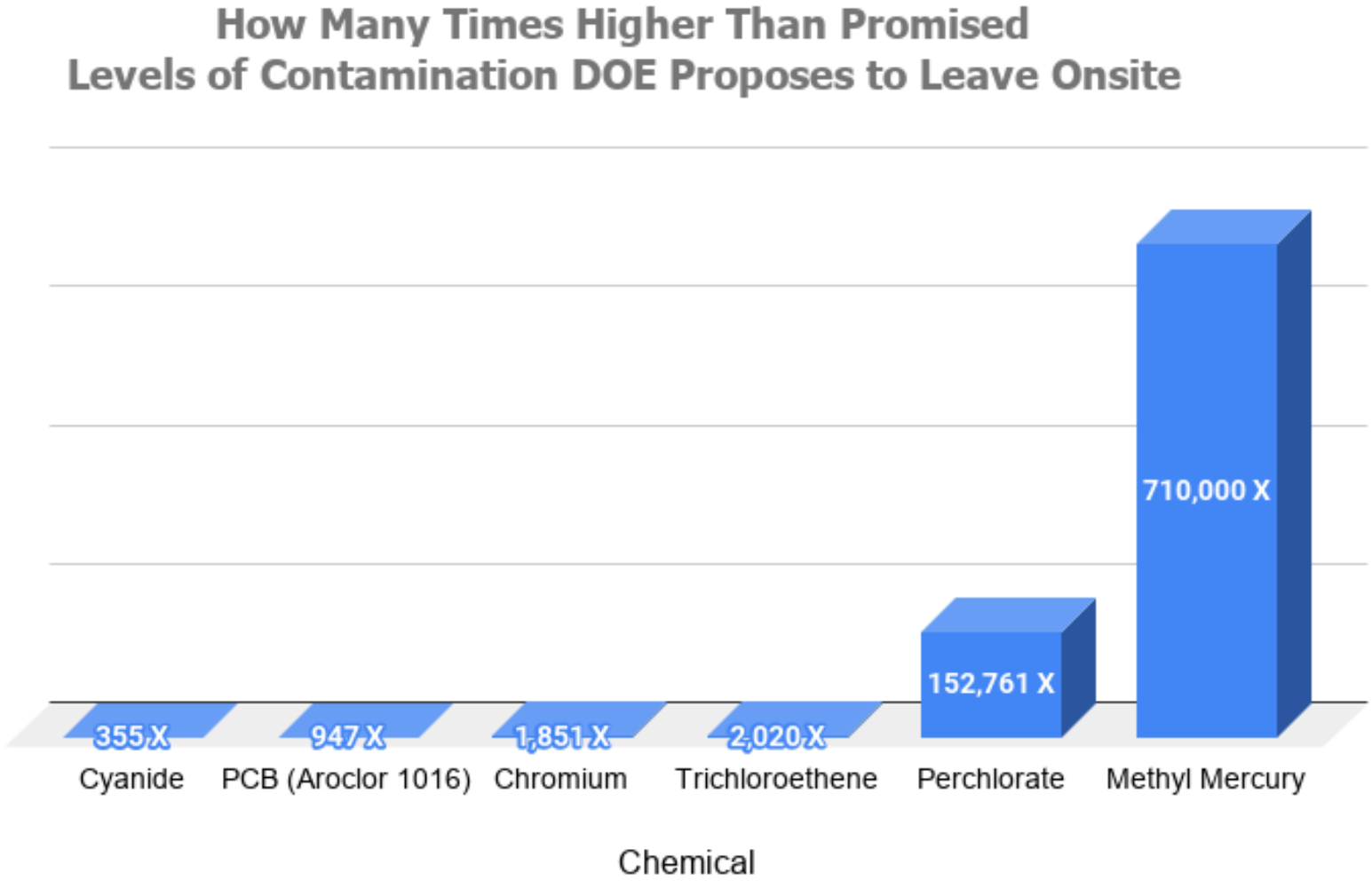

Contaminated Soil vs. Proposed DOE Cleanup (cubic yards)
1800000
1600000
1400000
1200000
1000000
800000
600000
400000
200000
0
Amount of soil DOE proposes to clean up
Total volume of contaminated soil DOE promised to clean up

98%

OF CONTAMINATED SOIL WILL NOT BE CLEANED UP BY DOE

Chemical	**The Cleanup Level DOE Promised to Meet** (mg/kg)	**The Cleanup Level ("Recreational") DOE Now Proposes** (mg/kg)	**How Many Times Higher Levels of Contamination DOE Proposes to Leave Onsite Than Promised**
Chromium	94	174000	**1,851**
Cyanide	0.6	213	**355**
Methyl Mercury	0.00005	35.5	**710,000**
PCB (Aroclor 1016)	0.017	16.1	**947**
Perchlorate	0.00163	249	**152,761**
Trichloroethene	0.005	10.1	**2,020**


How Many Times Higher Than Promised
Levels of Contamination DOE Proposes to Leave Onsite
355 X
947 X
1,851 X
2,020 X
Cyanide
PCB (Aroclor 1016)
Chromium
Trichloroethene
Chemical

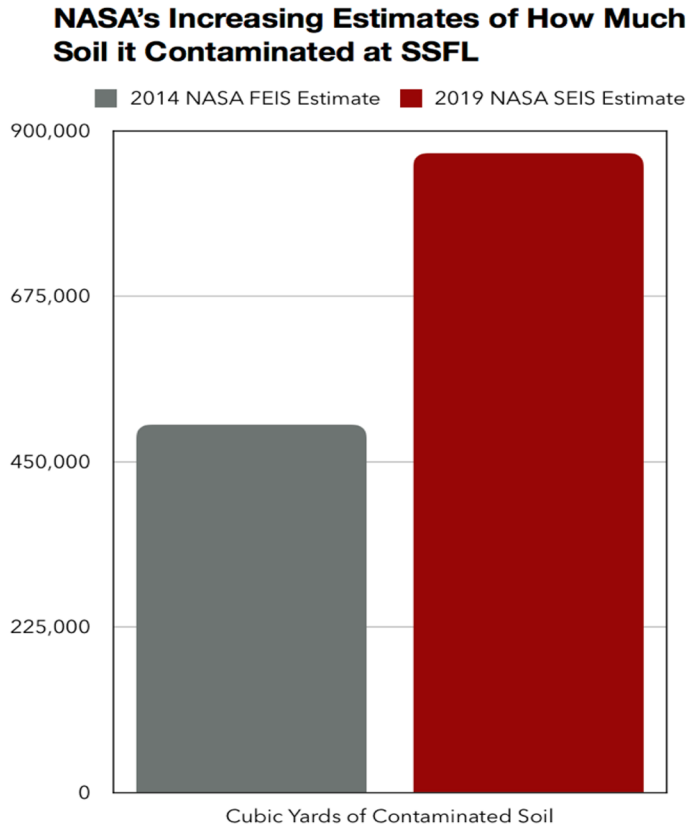

How Many Times Higher Than Promised
Levels of Contamination DOE Proposes to Leave Onsite
355 X
947 X
1,851 X
2,020 X
152,761 X
710,000 X
Cyanide
PCB (Aroclor 1016)
Chromium
Trichloroethene
Perchlorate
Methyl Mercury
Chemical

DOE ADMITS THIS WOULD VIOLATE THE LEGALLY BINDING 2010 ADMINISTRATIVE ORDER ON CONSENT IT SIGNED WITH DTSC

NASA IS ALSO BREAKING ITS CLEANUP AGREEMENT

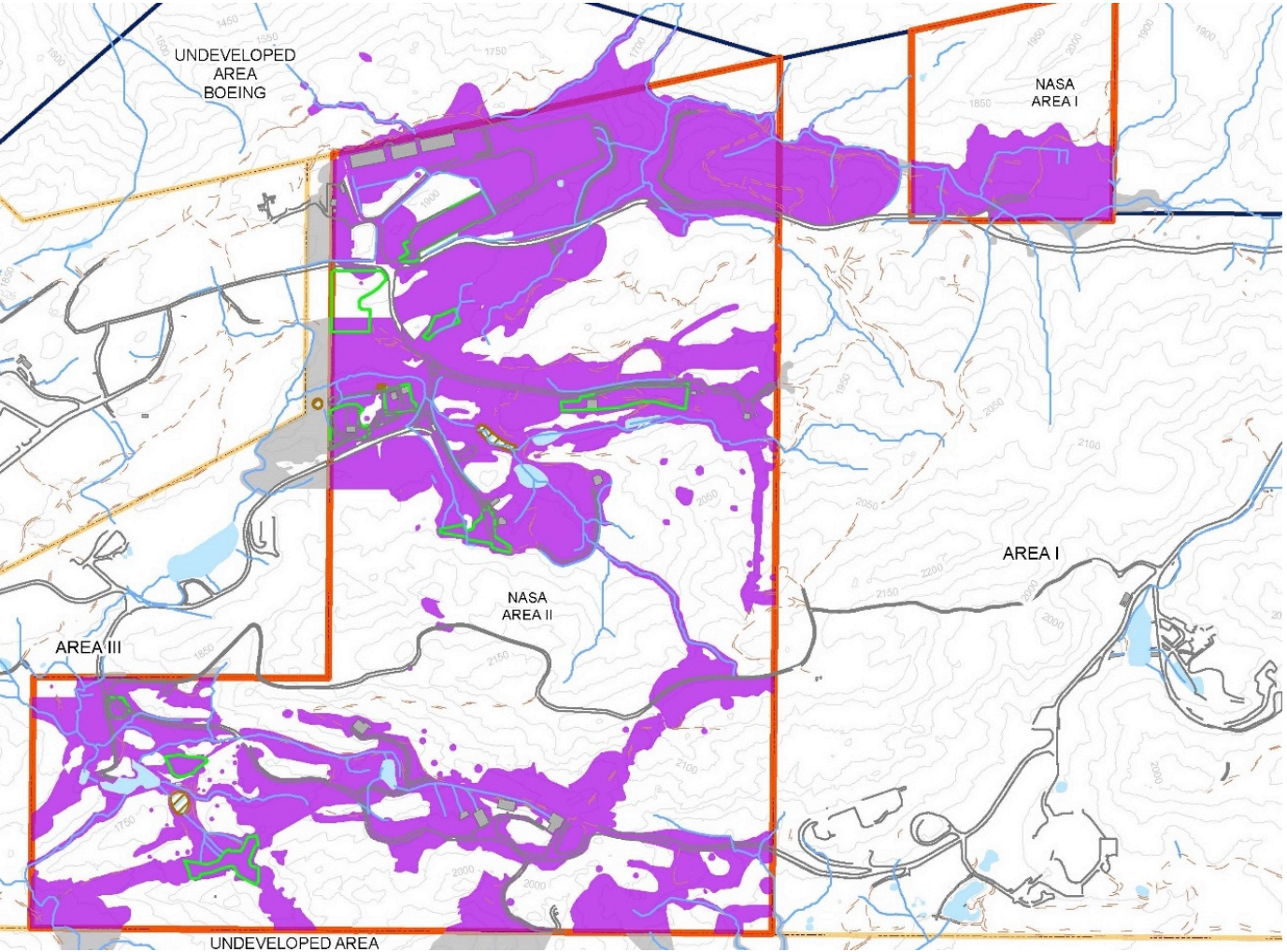
NASA Just Issued a Draft Supplemental Environmental Impact Statement That Violates Its AOC

NASA asserts it is preparing the Supplemental EIS because of "significant new information" — primarily that it has discovered that there is much more contamination on its property than it previously estimated.[1] NASA has supposedly "discovered" that there is 75% more contaminated soil than it had thought.

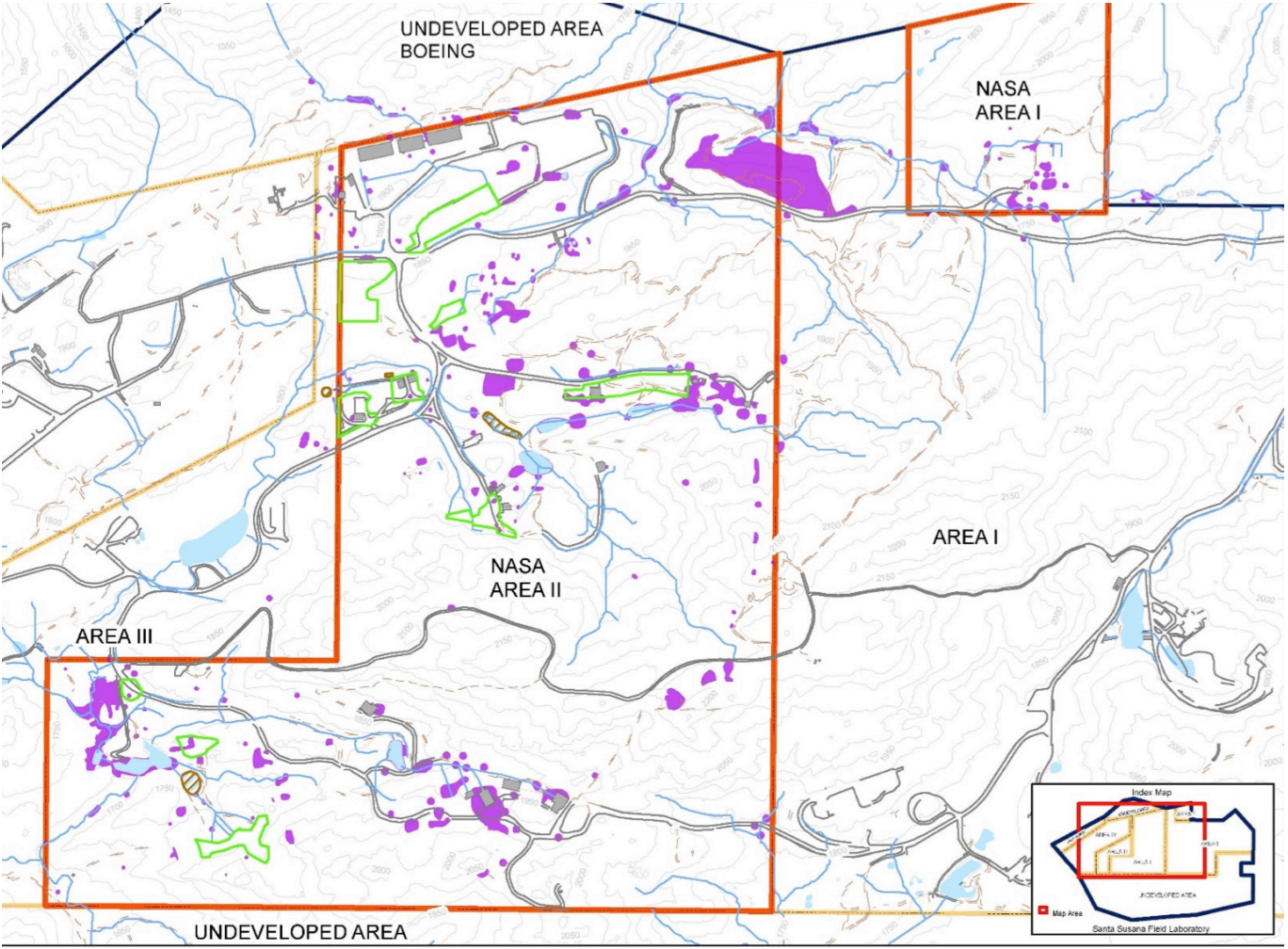


1. Draft SEIS, cover sheet

Despite Claiming That There is Much MORE Contamination Than It Had Previously Realized, NASA Now Proposes To Clean up FAR LESS Than It Had Promised



Areas that NASA had originally committed to clean up



Current proposal of what NASA intends to clean up

BOEING HAS ALSO BROKEN ITS CLEANUP COMMITMENTS

Boeing had long promised to clean up its parts of SSFL to a residential standard, as defined in a 2007 cleanup agreement with the dept. Of toxic substances control. It has now broken those commitments and wants to instead clean up only to a far less protective recreational standard.

BOEING'S PROPOSAL WOULD LEAVE HUNDREDS OF TIMES HIGHER CONCENTRATIONS OF CONTAMINANTS

~98%

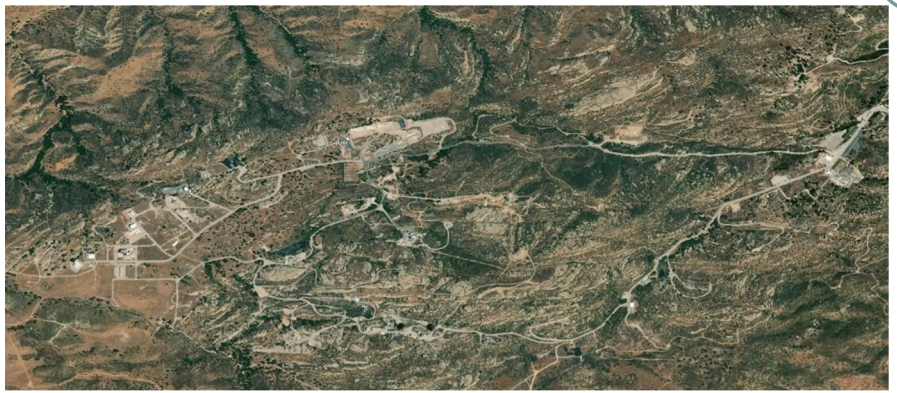
OF BOEING'S CONTAMINATED SOIL WOULDN'T GET CLEANED UP

This is consistent with Boeing's conduct that led to the hundreds of deaths from its 737 Max airplanes: putting its profits above public safety, and fighting against regulation by agencies that would require it to act to protect public safety.

DOE, NASA, AND BOEING'S SCARE TACTICS

- Inflated, without supporting data, the amount of soil excavation, and assumed excavation always needed down to bedrock
- Inflated number of truck trips and ignored alternative methods of transportation as well as haul routes that don't go through neighborhoods
- Ignored numerous viable methods for on-site cleanup (soil vapor extraction, thermal desorption, bioventing, etc.), which would require fewer trucks
- Inflated number of years needed to complete AOC cleanup, from 2 years to 25+

WOOLSEY FIRE AT SSFL NOV. 8 2018









If the SSFL Contamination Had Been Cleaned Up As Promised by 2017, There Wouldn't Have Been Concern that the 2018 Woolsey Fire That Began at SSFL Could Have Spread Contamination.

Woolsey Fire Began at SSFL



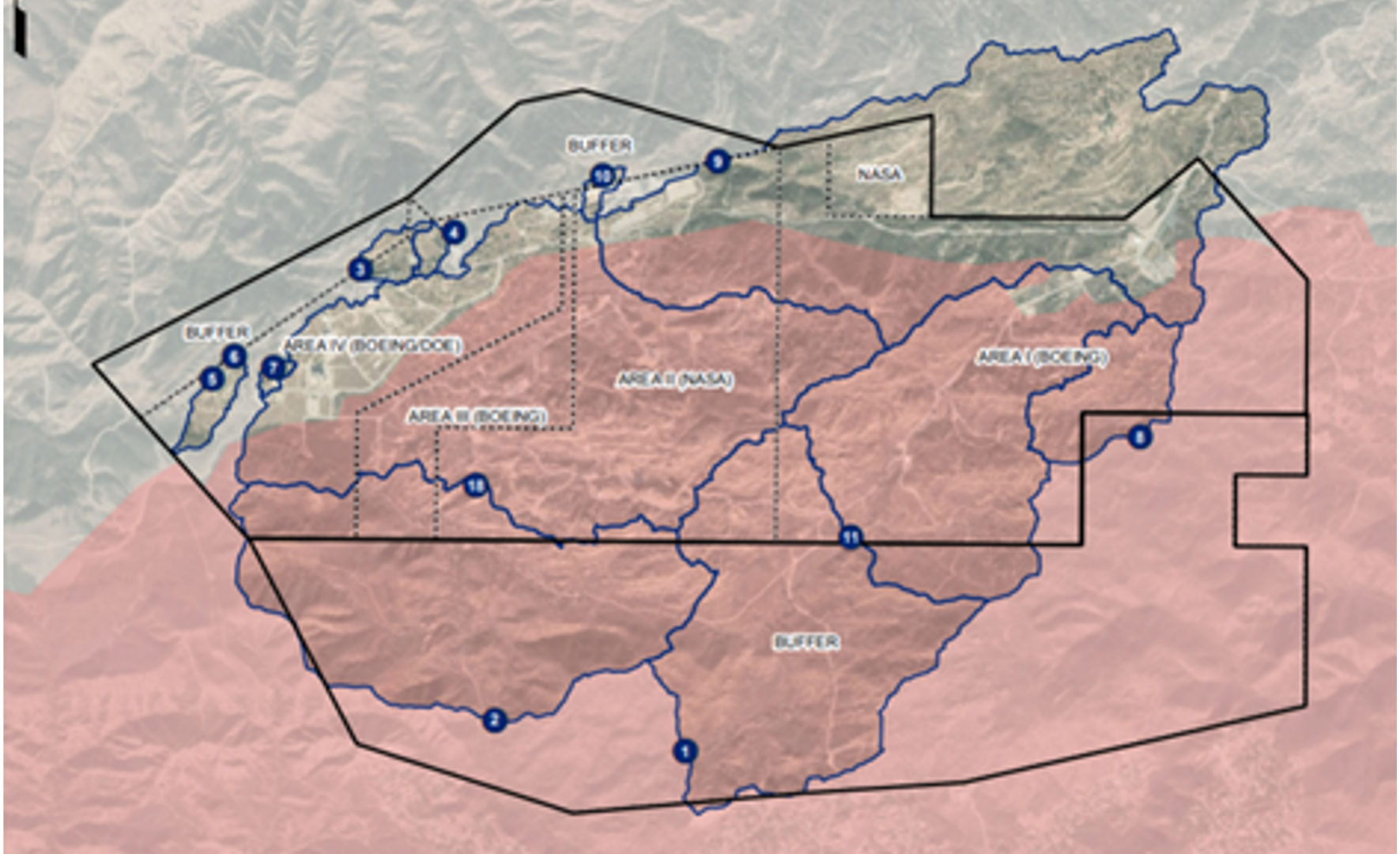
Twitter Post by Stu Mundel, KCBS-KCAL, November 8, 2018

The fire began just South of NASA's ELV Complex and near Southern Cal. Edison's substation and the nuclear meltdown site




Chatsworth
Substation
SRE - Sodium Reactor Experiment; 1957
Woolsey Canyon Rd
Woolsey Canyon Rd
Test Area Rd
© 2018 Google
Google Earth
1990
34°14'02.09" N 118°42'13.02" W elev 1816 ft eye alt 3612 ft


© 2018 Google
Google Earth
1994
34°14'12.07" N 118°42'09.49" W elev 1861 ft eye alt 2058 ft


BUFFER
NASA
BUFFER
AREA IV (BOEING/DOE)
AREA II (NASA)
AREA I (BOEING)
AREA III (BOEING)
BUFFER
10
9
4
3
5
6
7
8
18
11
2
1


Woolsey Fire Damage Assessment
Ventura County Sheriff - Office of Emergency Services
0
2
4mi



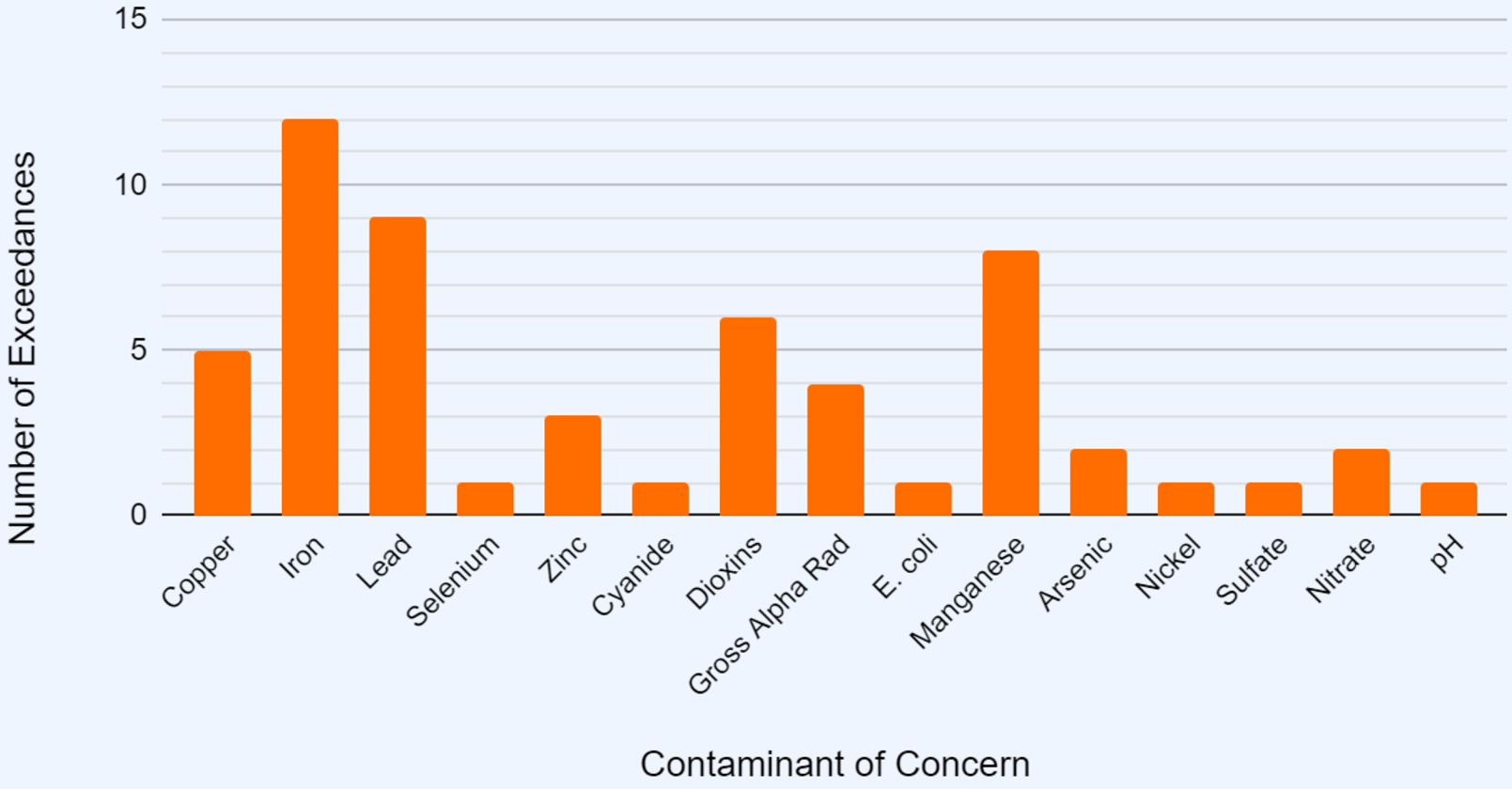
THE LA TIMES HAS REVEALED THAT

the Boeing fire engine broke down before it could even reach the fire.

There were, however, **57 exceedances** of pollution limits in surface water leaving SSFL in the period after and attributed to the Woolsey Fire

Number of Reported Exceedances per Contaminant

Data collection period: December 2018 - March 2019

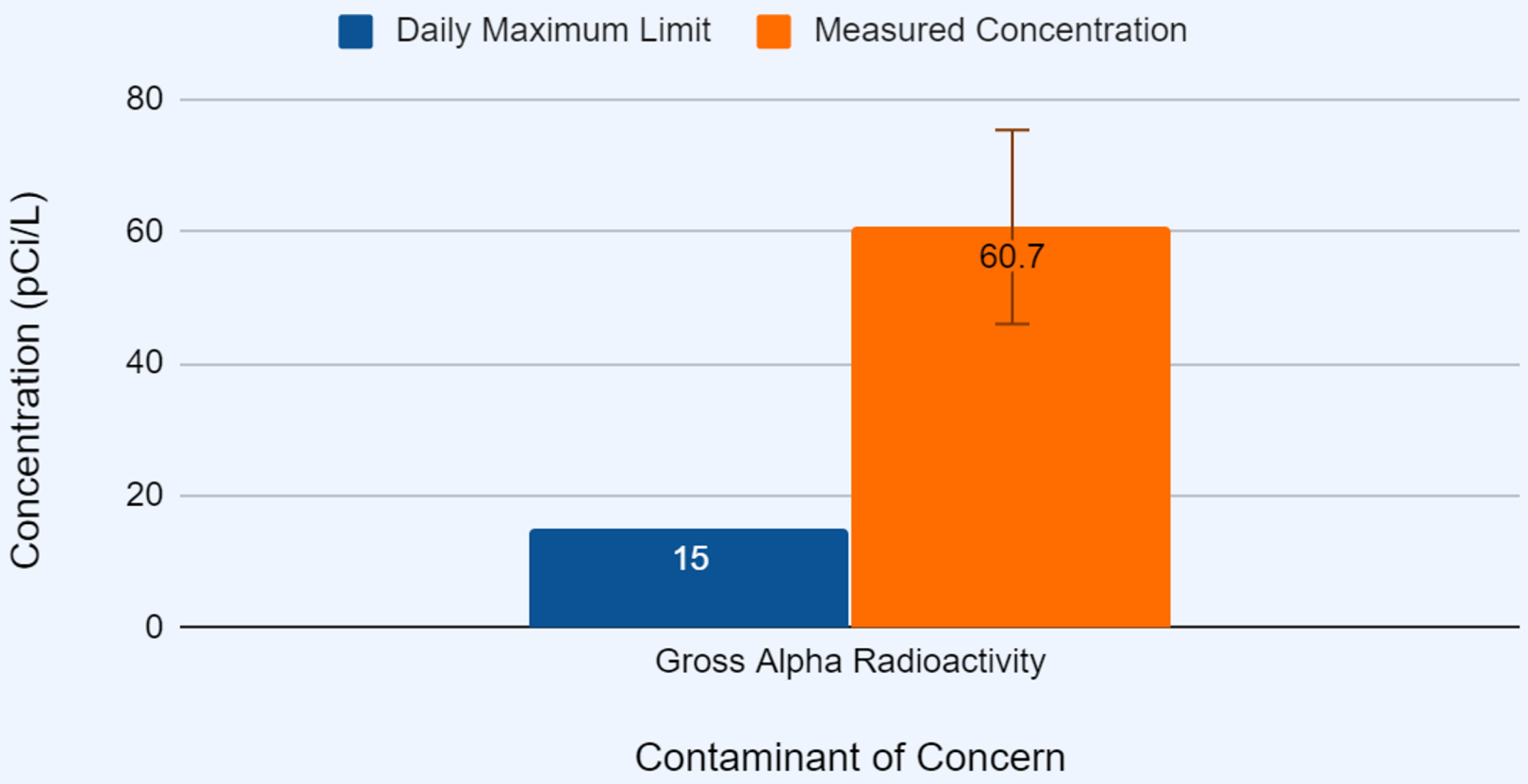


The Contaminants Detected Above Permit Limits/Benchmarks Were:

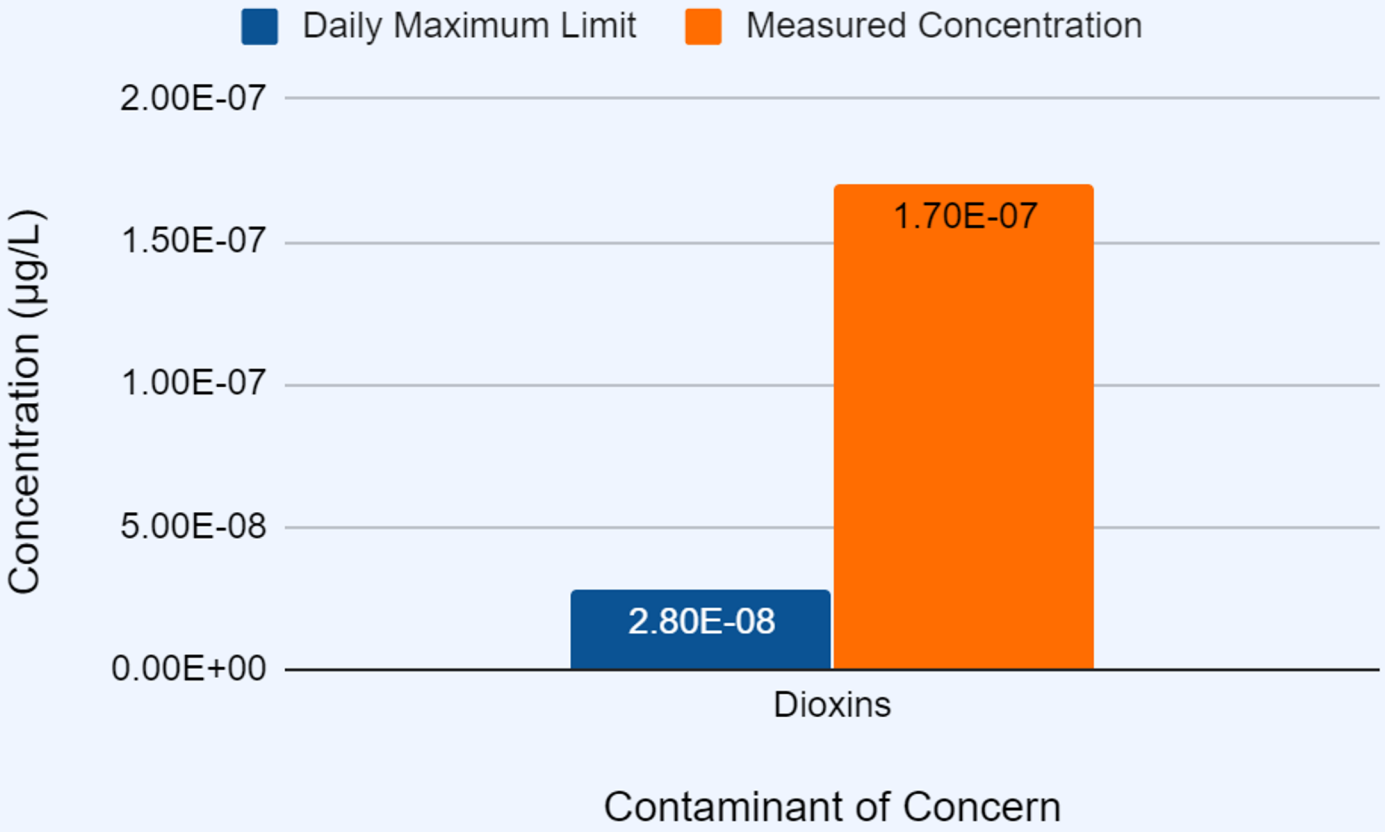
- Copper
- Iron
- Lead
- Selenium
- Zinc
- Cyanide
- Dioxins (TCDD TEQ)
- Gross Alpha
- Radioactivity
- E. Coli
- Manganese
- Arsenic
- Nickel
- Sulfate
- Nitrate

Contaminant	Regional Water Quality Control Board Limit	Reported Exceedance Value	How much larger was the exceedance than the limit?
Copper	14 µg/L	52 µg/L	**4 times the limit**
Iron	0.3 mg/L	98 mg/L	**327 times the limit**
Lead	5.2 mg/L	88 mg/L	**17 times the limit**
Selenium	8.2 µg/L	11 µg/L	**1.3 times the limit**
Zinc	119 µg/L	430 µg/L	**4 times the limit**
Cyanide	9.5 µg/L	15 µg/L	**1.6 times the limit**
Dioxins	2.8E-08 µg/L	1.7E-07 µg/L	**6 times the limit**
Gross Alpha	15 pCi/L	60.7±14.7 pCi/L	**4 times the limit**
E. Coli	235 MPN/100mL	5,300 MPN/100mL	**23 times the limit**
Manganese	50 µg/L	920 µg/L	**18 times the limit**
Arsenic	10.0 µg/L	17 µg/L	**1.7 times the limit**
Nickel	86 µg/L	170 µg/L	**2 times the limit**

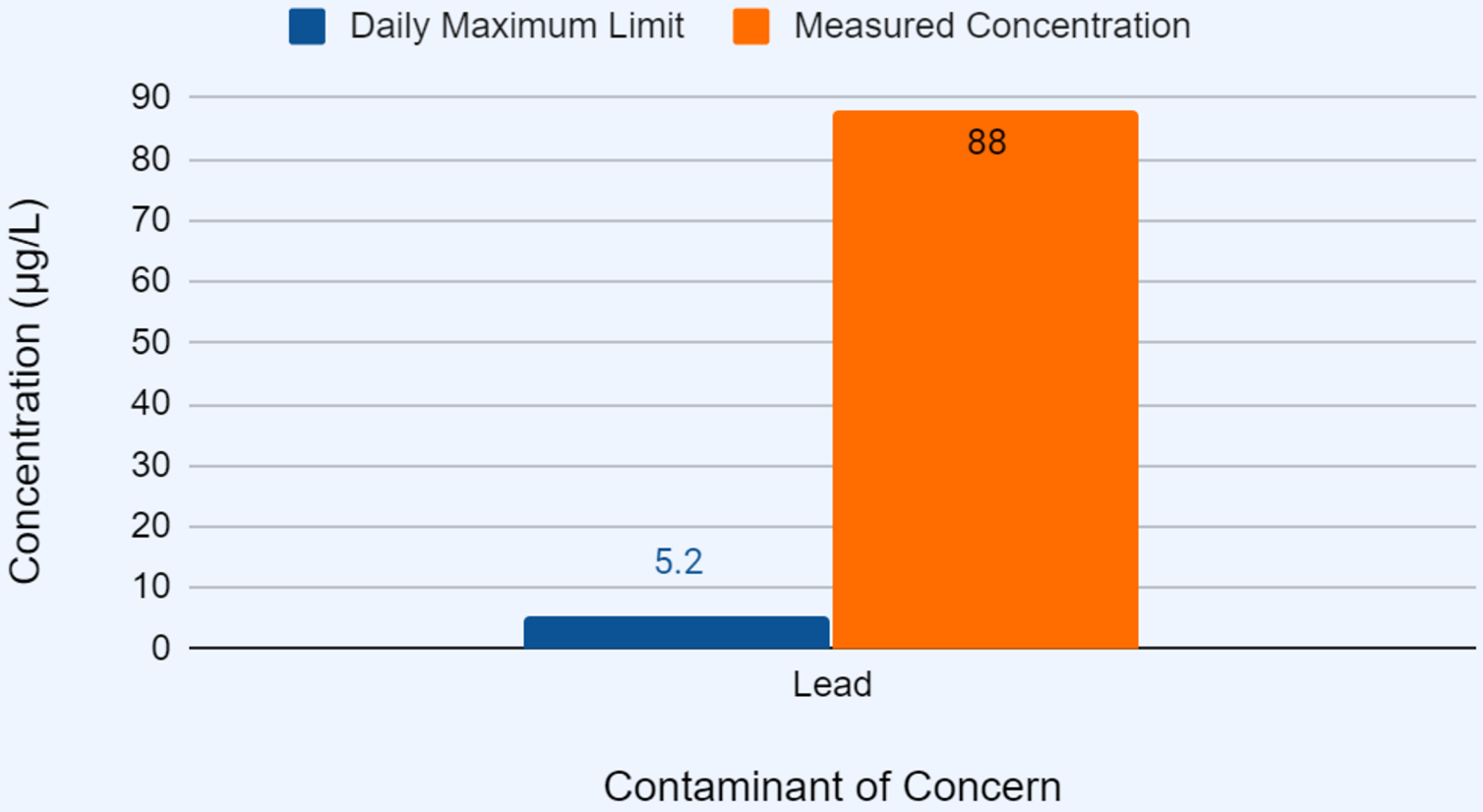
Maximum Measured Concentration of Contaminant versus Concentration Limit



Maximum Measured Concentration of Contaminant versus Concentration Limit



Maximum Measured Concentration of Contaminants versus Concentration Limits



SSFL CONTAMINATION LEAKS OFFSITE AND WILL CONTINUE TO DO SO UNTIL CLEANED UP

Although exceedances of pollution limits increased markedly after the Woolsey Fire, SSFL contamination has migrated offsite for years--approximately 350 exceedances over the previous decade.

Until SSFL is fully cleaned up, as required by the cleanup agreements executed by the parties responsible for the contamination, there there will be continuing risk of contaminants migrating offsite.

Conclusions

There are two alternative versions of the Golden Rule. We must choose by which one we live our professional and personal lives.

One protects those with the gold.

The other protects the Graces and Hazels of this world.

May we choose well.



https://www.facebook.com/groups/TeamGraceEllen/





Source: https://www.facebook.com/ourlittlehazelnut/